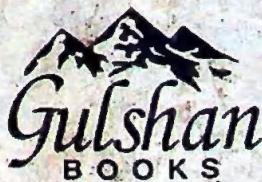




The Punjab, Northwest Frontier Province and **Kashmir**

James Douie



RESIDENCY ROAD, SRINAGAR-190001 KASHMIR
www.gulshanbooks.net, www.gulshanbooks.com

The Punjab, Northwest Frontier Province and Kashmir

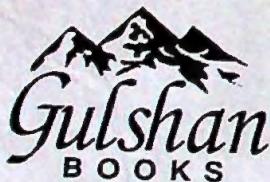
James Douie

©2013 Gulshan Books

ISBN : 978-81-8339-153-5

No part of this publication may be reproduced, stored in or introduced into a retrieval system, or transmitted, in any form, or by any means (electronic, mechanical, photocopying, recording, or otherwise), without the prior permission of the publisher.

First Published in 1916 by Cambridge Univ. Press, Cambridge. Reprinted by Gulshan Books (2013) under Copyright Act 1957 and Information Technology Act 2000.



RESIDENCY ROAD SRINAGAR-190001 KASHMIR INDIA

www.gulshanbooks.net, www.gulshanbooks.com

For orders and customer service enquiries :gulshanpub@rediffmail.com

Published by Sheikh Ajaz for Gulshan Books

email:chirmangulman@gmail.com

DISTRIBUTOR:

Sheikh Mohammad Usman & Sons

Booksellers, Publishers and Distributors

Residency Road Srinagar-190001, Kashmir.

Branch Office:

Madina Chowk, Exchange Road, Srinagar-190001, Kashmir.

printed at Chaman Enterprises, New Delhi.

EDITOR'S PREFACE

In his opening chapter Sir James Douie refers to the fact that the area treated in this volume—just one quarter of a million square miles—is comparable to that of Austria-Hungary. The comparison might be extended; for on ethnographical, linguistic and physical grounds, the geographical unit now treated is just as homogeneous in composition as the Dual Monarchy. It is only in the political sense and by force of the ruling classes, temporarily united in one monarch, that the term *Osterreichisch* could be used to include the Poles of Galicia, the Czechs of Bohemia and Moravia, the Szeklers, Saxons and more numerous Rumanians of Transylvania, the Croats, Slovenes and Italians of "Illyria," with the Magyars of the Hungarian plain.

The term *Panjábi* much more nearly, but still imperfectly, covers the people of the Panjáb, the North-West Frontier Province, Kashmir and the associated smaller Native States. The Sikh, Muhammadan and Hindu Jats, the Kashmiris and the Rájputs all belong to the tall, fair, leptorrhine Indo-aryan main stock of the area, merging on the west and south-west into the Biluch and Pathán Turko-Iranian, and fringed in the hill districts on the north with what have been described as products of the 'contact-metamorphism' with the Mongoloid tribes of Central Asia. Thus, in spite of the inevitable blurring of boundary lines, the political divisions treated together in this volume, form a fairly clean-cut geographical unit.

Sir James Douie, in this work, is obviously living over again the happy thirty-five years which he devoted to the service of North-West India: his accounts of the physiography, the flora and fauna, the people and the administration are essentially the personal recollections of one who has first studied the details as a District Officer and has afterwards corrected his perspective, stage by stage, from the successively higher view-point of a Commissioner, the Chief Secretary, Financial Commissioner, and finally as Officiating Lieut-Governor. No one could more appropriately

undertake the task of an accurate and well-proportioned thumb-ail sketch of North-West India and, what is equally important to the earnest reader, no author could more obviously delight in his subject.

T.H.H.

ALDERLEY EDGE,

March 9th, 1916.

NOTE BY AUTHOR

My thanks are due to the Government of India for permission to use illustrations contained in official publications. Except where otherwise stated the numerous maps included in the volume are derived from this source. My obligations to provincial and district gazetters have been endless. Sir Thomas Holdich kindly allowed me to reproduce some of the charts in his excellent book on *India*. The accuracy of the sections on geology and coins may be relied on, as they were written by masters of these subjects, Sir Thomas Holland and Mr R.B. Whitehead, I.C.S. Chapter XVII could not have been written at all without the help afforded by Mr Vincent Smith's *Early History of India*. I have acknowledged my debts to other friends in the "List of Illustrations."

J.M.D.

8 May 1916.

Contents

CHAPTER I

AREAS AND BOUNDARIES 1

CHAPTER II

MOUNTAINS, HILLS, AND PLAINS 7

CHAPTER III

RIVERS 23

CHAPTER IV

GEOLOGY AND MINERAL RESOURCES 37

CHAPTER V

CLIMATE 46

CHAPTER VI

HERBS, SHRUBS, AND TREES 52

CHAPTER VII

FORESTS 63

CHAPTER VIII

BEASTS, BIRDS, FISHES, AND INSECTS 66

CHAPTER IX

THE PEOPLE: NUMBERS, RACES, AND LANGUAGES 71

CHAPTER X

THE PEOPLE (continued): RELIGIONS 85

CHAPTER XI

THE PEOPLE (Continued): EDUCATION 91

CHAPTER XII

ROADS AND RAILWAYS 95

CHAPTER XIII	99
CANALS	
CHAPTER XIV	106
AGRICULTURE AND CROPS	
CHAPTER XV	113
HANDICRAFTS AND MANUFACTURES	
CHAPTER XVI	117
EXPORTS AND IMPORTS	
CHAPTER XVII	118
HISTORY-PRE-MUHAMMADAN PERIOD, 500 B.C. -1000 A.D.	
CHAPTER XVIII	124
HISTORY (Continued). THE MUHAMMADAN PERIOD	
CHAPTER XIX	133
HISTORY (Continued). THE SIKH PERIOD	
CHAPTER XX	138
HISTORY (continued). THE BRITISH PERIOD	
CHAPTER XXI	147
ARCHAEOLOGY AND COINS	
CHAPTER XXII	153
ADMINISTRATION -GENERAL	
CHAPTER XXIII	157
ADMINISTRATION-LOCAL	
CHAPTER XXIV	159
REVENUE AND EXPENDITURE	
CHAPTER XXV	162
PANJAB DISTRICTS AND DELHI	
CHAPTER XXVI	200
THE PANJAB NATIVE STATES	

CHAPTER XXVII	
THE NORTH WEST FRONTIER PROVINCE	218
CHAPTER XXVIII	
KASHMIR AND JAMMU	234
CHAPTER XXIX	
CITIES	241
CHAPTER XXX	
OTHER PLACES OF NOTE	256
INDEX	276

CHAPTER I

AREAS AND BOUNDARIES

Introductory—Of the provinces of India the Panjáb must always have a peculiar interest for Englishmen. Invasions by land from the west have perforce been launched across its great plains. The English were the first invaders who, possessing sea power, were able to outflank the mountain ranges which guard the north and west of India. Hence the Panjáb was the last, and not the first, of their Indian conquests, and the courage and efficiency of the Sikh soldiery, even after the guiding hand of the old Mahárája Ranjít Singh was withdrawn, made it also one of the hardest. The success of the early administration of the province, which a few years after annexation made it possible to use its resources in fighting men to help in the task of putting down the mutiny, has always been a matter of just pride, while the less familiar story of the conquests of peace in the first sixty years of British rule may well arouse similar feelings.

Scope of work—A geography of the Panjáb will fifty embrace an account also of the North West Frontier Province, which in 1901 was severed from it and formed into a separate administration, of the small area recently placed directly under the government of India on the transfer of the capital from Calcutta to Delhi, and of the native states in political dependence on the Panjáb Government. It will also be convenient to include Kashmír and the tribal territory beyond the frontier of British India which is politically controlled from Pesháwar. The whole tract covers ten degrees of latitude and eleven of longitude. The furthest point of the Kashmír frontier is in $37^{\circ} 2' N.$, which is much the same as the lati-

tude of Syracuse. In the south-east the Panjab ends at $27^{\circ} 4'$ N., corresponding roughly to the position of the southernmost of the Canary Islands. Lines drawn west from Peshawar and Lahore would pass to the north of Beirut and Jerusalem respectively. Multan and Cairo are in the same latitude, and so are Delhi and Teneriffe. Kashmir stretches eastwards to longitude $80^{\circ} 3'$ and the westernmost part of Waziristan is in $69^{\circ} 2'$ E.

Distribution of Area

The area dealt with is roughly 253,000 square miles. This is but two-thirteenths of the area of the Indian Empire, and yet it is less by only 10,000 square miles than that of Austria-Hungary including Bosnia and Herzegovina. The area consists of:

	Sq.miles
(1) The Panjab	97,000
(2) Native States dependent on Panjab Government	36,500
(3) Kashmir	81,000
(4) North west Frontier Province	13,000
(5) Tribal territory under the political control of the chief Commissioner of North West Frontier Province, roughly	25,500

Approximately 136,000 square miles may be classed as highlands and 117,000 as plains, and these may be distributed as follows over the above divisions:

Highlands	Plains	
	sq. miles	sq.miles
(1) Panjab, British	11,000	86,000
(2) Panjab, Native States	12,000	24,500
(3) Kashmir	81,000	—
(4) North West Frontier Province	6,5000	6,500
(5) Tribal Territory	25,500	—

On the north the highlands include the Himalayan and sub-Himalayan (Siwalik) tracts to the south and east of the Indus, and north of that river the Mustagh-Karakoram range and the bleak salt plateau beyond

that range reaching almost up to the Kuenlun Mountains. To the west of the Indus they include those spurs of the Hindu Kush which run into Chitral and Dir, the Buner and Swat hills, the Safed Koh, the Waziristan hills, the Suliman range, and the low hills in the trans-Indus districts of the North West Frontier Province.

Boundary with China —There is a point to the north of Hunza in Kashmir where three great mountain chains, the Mustagh from the south-east, the Hindu Kush from the south-west, and the Sarikol (an affshoot of the Kuenlun) from the north-east, meet. It is also the meeting-place of the Indian, Chinese, and Russian empires and of Afghanistan. Westwards from this the boundary of Kashmir and Chinese Turkestan runs for 35° miles (omitting curves) through a desolate upland lying, well to the north of the Muztagh-Karakoram range. Finally in the north-east corner of Kashmir the frontier impinges on the great Central Asián axis of the Kuenlun. From this point it turns southwards and separates Chinese Tibet from the salt Lingzi Thang plains and the Indus valley in Kashmir, and the eastern part of the native state of Bashahr, which physically form a portion of Tibet.

Boundary with United Provinces —The south-east corner of Bashahr is a little to the north of the great Kedarnath peak in the Central Himalaya and of the source of the Jamna. Here the frontier strikes to the west dividing Bashahr from Teri Garhwal, and native state under the control of the government of the United Provinces. Turning again to the south it runs to the junction of the Tons and Jamna, separating Teri Garhwal from Sirmur and some of the smaller Simla Hill States. Henceforth the Jamna is with small exceptions the boundary between the Panjab and the United Provinces.

Boundary with Afghanistan —we must now return to our starting-point at the eastern extremity of the Hindu Kush, and trace the boundary with Afghanistan. The frontier runs west and south-west along the Hindu Kush to the Dorah pass dividing Chitral from the Afghan province of Wakhan, and streams which drain into the Indus from the head waters of the Oxus. At the Dorah pass it turns sharply to the south, following a great spur which parts the valley of the Chitral river (British) from that of

its Afghan affluent, the Bashgol. Below the junction of the two streams at Arnawai the Chitral changes its name and becomes the Kunar. Near this point the "Durand" line begins. In 1893 an agreement was made between the Amir Abdurrahman and Sir Mortimer Durand as representative of the British Government determining the frontier line from Chandak in the valley of the Kunar, twelve miles north of Asmar, to the Persian border. Asmar is an Afghan village on the left bank of the Kunar to the south of Arnawai. In 1894 the line was demarcated along the eastern water shed of the Kunar valley to Nawakotal on the confines of Bajaur and the country of the Mohmands.

Thence the frontier, which has not been demarcated, passes through the heart of the Mohmand country to the Kabul river and beyond it to our frontier post in the Khaibar at Landikhana.

From this point the line, still undemarcated, runs on in a south-westernly direction to the Safed Koh, and then strikes west along it to the Sikaram mountain near the Paiwar Kotal at the head of the Kurram valley. From Sikaram the frontier runs south and south-east crossing the upper waters of the Kurram, and dividing our possessions from the Afghan province of Khost. This line was demarcated in 1894.

At the south of the Kurram valley the frontier sweeps round to the west leaving in the British sphere the valley of the Tochi. Turning again to the south it crosses the upper waters of the Tochi and passes round the back of Waziristan by the Shawal valley and the plains about Wana to Domandi on the Gomal river, where Afghanistan, Biluchistan, and the North West Frontier Province meet. The Waziristan boundary was demarcated in 1895.

Political and Administrative Boundaries—The boundary described above defines spheres of influence, and only in the Kurram valley does it coincide with that of the districts for whose orderly administration we hold ourselves responsible. All we ask of Wazirs, Afridis, or Mohmands is to leave our people at peace; we have no concern with their quarrels or blood feuds, so long as they abide in their mountains or only leave them for the sake of lawful gain. Our administrative boundary, which speaking broadly we took over from the Sikhs, usually runs at the foot of the hills.

A glance at the map will show that between Pesháwar and Kohát the territory of the independent tribes comes down almost to the Indus. At this point the hills occupied by the Jowáki section of the Afrídí tribe push out a great tongue eastwards. Our military frontier road runs though these hills, and we actually pay the tribesmen of the Kohát pass for our right of way. Another tongue of tribal territory reaches right down to the Indus, and almost severs the Pesháwar and Hazára districts. Further north the frontier of Hazára lies well to the east of the Indus.

Frontier with Biluchistán —At Domandí the frontier turns to the east, and following the Gomal river to its junction with the Zhob at Kajúri Kach forms the boundary of the two British administrations. Henceforth the general direction of the line is determined by the trend of the Sulimán range. It runs south to the Vehoa pass, where the country of the Patháns of the North West Frontier Province ends and that of the Hill and Plain Biluches subject to the Panjáb Government begins. From the Vehoa pass to the Kahá torrent the line is drawn so as to leave Biluch tribes with the Panjáb and Pathán tribes with the Biluchistán Agency. South of the Kahá the division is between Biluch tribes, the Marrís and Bugtís to the west being managed from Quetta, and the Gurchánís and Mazárís, who are largely settled in the plains, being included in Dera Ghází Khán district the Panjáb, Sind, and Biluchistán meet. From this point the short common boundary of the Panjáb and Sind runs east to the Indus.

The Southern Boundary —East of the Indus the frontier runs south-east for about fifty miles parting Sind from the Baháwalpur state, till a point is reached where Sind, Rajputana, and Bahawalpur join. A little further to the east is the southern extremity of Baháwalpur at $70^{\circ} 8' E.$ and $27^{\circ} 5' N.$ From this point a line drawn due east would at a distance of 37° miles pass a few miles to the north of the south end of Gurgaon and a few miles to the south of the border of the Narnaul tract of Pátiala. Between Narnaul and the south-east corner of the Baháwalpur State the great Rájputána desert, mainly occupied in this quarter by Bikaner, thrusts northwards a huge wedge reaching almost up to the Sutlej. To the west of the wedge is Baháwalpur and to the east the British district of Hissár. The apex is less than 100 miles from Lahore, while a line drawn due south

from that city to latitude 27.5° north would exceed 270 miles in length. The Jaipur States lies to the south and west of Narnaul, while Gurgaon has across its southern frontiers Alwar and Bharatpur, and near the Jamna the Muttra district of the United Provinces.

CHAPTER II

MOUNTAINS, HILLS, AND PLAINS

The Great Northern Rampart —The huge mountain rampart which guards the northern frontier of India thrusts out in the north-west a great bastion whose outer walls are the Hindu Kush and the Muztagh-Karakoram ranges. Behind the latter with a general trend from south-east to north-west are the great valley of the Indus to the point near Gilgit where it turns sharply to the south, and a succession of mountain chains are glens making up the Himalayan tract, through which the five rivers of the Panjab and the Jamna find their way to the plains. To meet trans-Indus extensions of the Himálaya the Hindu Kush pushes out from its main axis great spurs to the south, flanking the valleys which drain into the Indus either directly or through the Kábul river.

The Himálaya —Tibet, which from the point of view of physical geography includes a large and little known area in the Kashmír States to the north of the Karakoram range, is a lofty, desolate, wind swept plateau with a mean elevation of about 15,000 feet. In the part of it situated to the north of the north-west corner of Nipál lies the Manasarowar lake, in the neighbourhood of which three great Indian rivers, the Tsanpo or Brahmapútra, the Sutlej, and the Indus, take their rise. The Indus flows to the north-west for 500 miles and then turns abruptly to the south to seek its distant home in the Indian Ocean. The Tsanpo has a still longer course of 800 miles eastwards before it too bends southwards to flow through Assam into the Bay of Bengal. Between the points where these two giant rivers change their direction there extends for a distance of 1500 miles the vast congeries of mountain ranges known collectively as the

“Himálaya” or “Adobe of Snow.” As a matter of convenience the name is sometimes confined to the mountains east of the Indus, but geologically the hills of Buner and Swát to the north of Pesháwar probably belong to the same system. In Sanskrit literature the Himálaya is also known as “Himavata,” whence the classical *Emodus*.

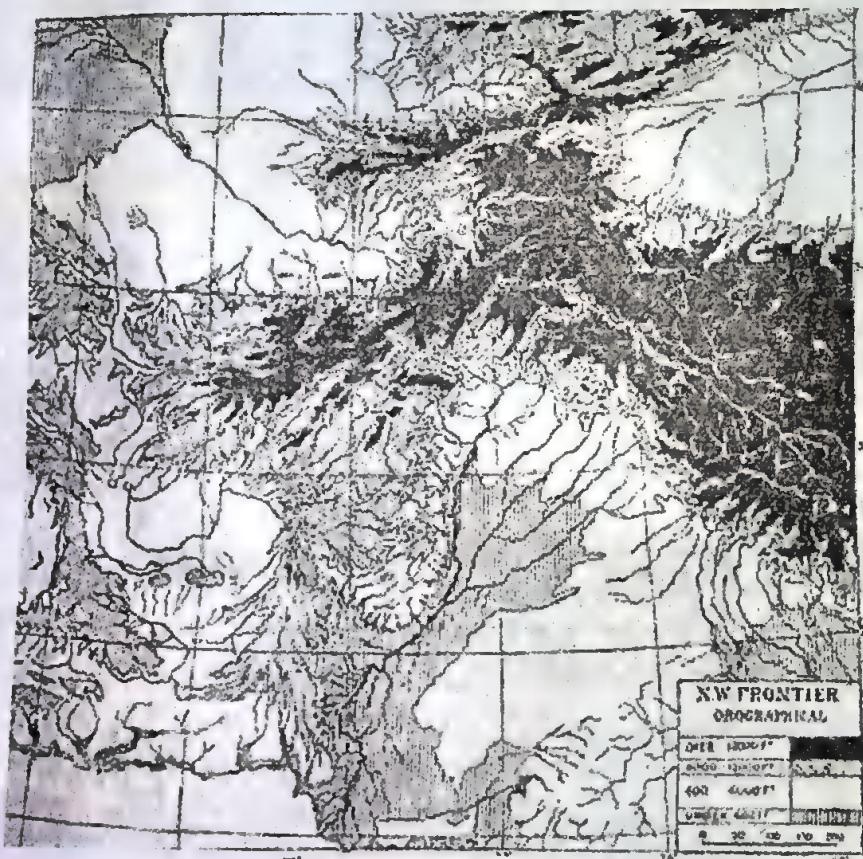


Fig. I Orographical Map

The Kumáon Himálaya. —The Himálaya may be divided longitudinally into three sections, the eastern of Sikkim, the mid or Kumáon, and the north-western of Ladákh. With the first we are not concerned. The Kumáon section lies mainly in the United Provinces, but it includes the sources of the Jamna, and contains the chain in the Panjáb which is at once the southern watershed of the Sutlej and the great divide between the two river systems of Northern India, the Gangetic draining into the Bay of Bengal, and the Indus carrying the enormous discharge of the north-west Himálaya, the Muztagh-Karakoram, and the Hindu Kush ranges into the Indian Ocean. Simla stands on the south-western end of

this watershed, and below it the Himálaya drops rapidly to the Siwálik foot-hills and to the plains. Jakko, the *deodar*-clad hill round which so much of the life of the summer capital of India revolves, attains a height of 8000 feet. The highest peak within a radius of 25 miles of Simla is the Chor, which is over 12,000 feet high, and does not lose its snow cap till May. Hattu, the well-known hill above Narkanda, which is 40 miles from Simla by road, is 1000 feet lower. But further west in Bashahr the higher peaks range from 16,000 to 22,000 feet.

The Inner Himálaya or Zánskar Range —The division of the Himálaya into the three sections named above is convenient for descriptive purposes. But its chief axis runs through all the sections. East of Nipál it strikes into Tibet not very far from the source of the Tsanpo, is soon pierced by the gorge of the Sutlej, and beyond it forms the southern watershed of the huge Indus valley. In the west this great rampart is known as the Zánskar range. For a short distance it is the boundary between the panjáb and Kashmír, separating two outlying portions of the Kangára district, Lahul and Spiti, from Ladákh. In this section the peaks are from 19,000 feet high, and the Baralácha pass on the road from the Kulu valley in Kángra to Leh, the capital of Ladákh, is at an elevation of about 16,500 feet. In Kashmír the Zánskar or Inner Himálaya divides the valley of the Indus from those of the Chenáb and Jhelam. It has no mountain to dispute supremacy with Everest (29,000 feet), or Kinchinjunga in the Eastern Himálaya, but the inferiority is only relative. The twin peaks called Nun and Kun to the east to Srínagar exceed 23,000 feet, and in the extreme north-west the grand mountain mass of Nanga Parvat towers above the Indus to a height of 26,182 feet. the lowest point in the chain the Zojilá (11,300 feet) on the route from Srínagar, the capital of Kashmír, to Leh on the Indus.

The road from Srinagar to Gilgit passes over the Burzil pass at an elevation of 13,500 feet.

The Zojilá is at the top of the beautiful valley of the Sind river, a tributary of the Jhelam. The lofty Zánskar range blocks the inward flow of the monsoon, and once the Zojilá is crossed the aspect of the country entirely changes. The land of forest glades and green pastures is left be-

hind, and a region of naked and desolate grandeur begins.

"The waste of snow.... Is the frontier of barren Tibet, where sandy wastes replace verdant meadows, and where the wild ridges, jutting up against by sky, are kept bare of vegetation, their strata crumbling under the destructive action of frost and water, leaving bare ribs of gaunt and often fantastic outline.... The colouring of the mountains is remarkable throughout Ladákh and nowhere more so than near the Fotulá (a pass on the road to Leh to the south of the Indus gorge).... As we ascend the peaks suggest organ pipes, so vertical are the ridges, so jagged the ascending outlines. And each pipe is painted a different colour.... Pale slate green, purple, yellow, grey, orange, and chocolate, each colour corresponding with a layer of the slate, shale, limestone, or top strata" (Neve's *Picturesque Kashmir*, pp. 108 and 117).

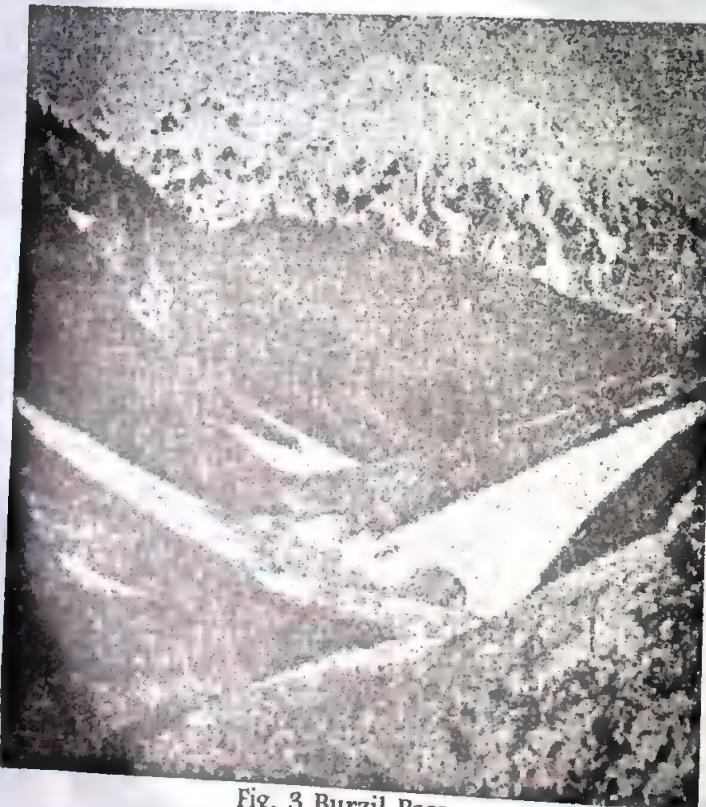


Fig. 3 Burzil Pass

In all this desolation there are tiny oases where level soil and a supply of river water permit of cultivation and of some tree growth.

Water divide near Baralácha and Rotang Passes in Kulu. —We have seen that the Indus and its greatest tributary, the Sutlej, rise beyond

the Himálaya in the Tibetan plateau. The next great water divide is in the neighborhood of the Baralácha pass and the Rótang pass, 30 miles to the south of it. The route from Simla to Leh runs at a general level of 7000 to 9000 feet along or near the Sutlej-Jamna watershed to Narkanda (8800 feet). Here it leaves the Hindustán-Tibet road and drops rapidly into the Sutlej gorge, where the Luri bridge is only 2650 feet above sea level. Rising steeply on the other side the Jalaurí pass on the watershed between the Sutlej and the Biás is crossed at an elevation of 10,800 feet. A more gradual descent brings the traveler to the Biás at Lárjí, 3080 feet above sea level. The route then follows the course of the Biás through the beautiful Kulu valley to the Rotang pass (13,326 feet), near which the river rises. The upper part of the valley is flanked on the west by the short, but very lofty Bara Bangáhal range, dividing Kulu from Kángra and the source of the Biás from that of the Ráví. Beyond the Rotang is Lahul, which is divided by a watershed from Spiti and the torrents which drain into the Sutlej. On the western side of this watershed are the sources of the Chandra and Bhága, which unite to form the river known in the plains as the Chenáb.

Mid Himálaya or Pangí Range—The Mid Himálayan or Pangí range, striking west from the Rotang pass and the northern end of the Bara Bangáhal chain, passes through the heart of Chamba dividing the valley of the Chenáb (Pangí) from that of the Ráví. After entering Kashmír it crosses the Chenáb near the Kolahoi cone (17,900 feet) and the head waters of the Jhelam. Thence it continues west over Harmukh (16,900 feet), which casts its shadow southwards on the Wular lake, to the valley of the Kishnganga, and probably across it to the mountains which flank the magnificent Kágan glen in Hazára.

Out Himálaya or Dhauladhár-Pír Panjál Range—The Outer Himálaya also starts from a point near the Rotang pass, but some way to the south of the offset of the Mid Himalayan chain. Its main axis runs parallel to the latter, and under the name of the Dhauladhár (white ridge) forms the boundary of the Chamba State and Kángra, behind whose headquarters at Dharmásala it stands up like a huge wall. It has a mean elevation

Of 15,000 feet, but rises as high as 16,000. It passes from Chamba into Bhadarwáh in Kashmír, and crossing the Chenáb is carried on as the Pír Panjál range through the south of that State. With an elevation of only 14,000 or 15,000 feet it is a dwarf as compared with the giants of the Inner Himalayan and Muztagh-Kara-koram chains. But it hides them from the dwellers in the Panjáb, and its snowy crest is a very striking picture as seen in the cold weather from the plains of Ráwalpindí, Jhelam, and Gujrát. The outer Himálaya is continued beyond the gorges of the Jhelam and Kishnganga rivers in Kajnág and the hills of the Hazára district. Near the eastern extremity of the Dhauladhára section of the Outer Himálaya it sends out southwards between Kulu and Mandí a lower offshoot. This is crossed by the Babbu (9480 feet) and Dulchí passes, connecting Kulu with Kángra through Mandí. Geologically the Kulu-Mandí range appears to be continued to the east of the Biás and across the Sutlej over Hattu and the Chor to the hills near Masúrí (Mussoorie), a well known hill station in the United Provinces. Another, offshoot at the western end of the Dhauladhár passes through the beautiful hill station of Dalhousie, and sinks into the low hills to the east of the Ráví, where it leaves Chamba and enters the British district of Gurdáspur.

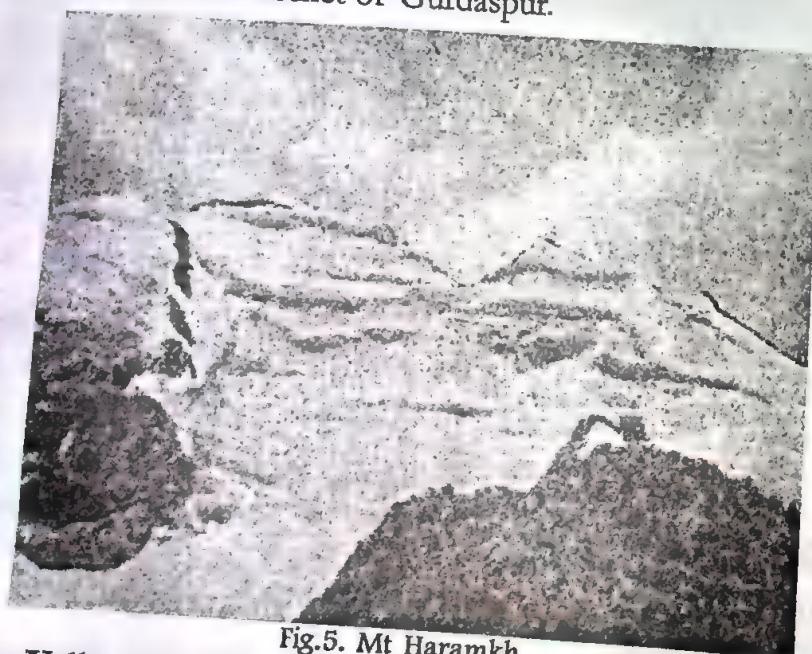


Fig. 5. Mt Haramkh

River Valleys and Passes in the Himálaya — While these principal chains can be traced from south-east to north-west over hundreds of

miles it must be remembered that the Himálaya is a mountain mass from 150 to 200 miles broad, that the main axes are linked together by subsidiary cross chains dividing the head waters of great rivers, and flanked by long and lofty ridges running down at various angles to the gorges of these streams and their tributaries. The typical Himalayan river runs in a gorge with mountains dipping down pretty steeply to its sides. The lower slopes are cultivated, but the land is usually stony and uneven, and as a whole the crops are not of a high class. The open valleys of the Jhelam in Kashmír and of the Biás in Kulu are exceptions. Passes in the Himálaya are not defiles between high cliffs, but cross the crest of a ridge at a point where the chain is locally depressed, and snow melts soonest. In the outer and Mid Himálaya the line of perpetual snow is at about 16,000 feet, but for six months of the year the snow-line comes down 5000 feet lower. In the Inner Himálaya and the Muztagh-Karakoram, to which the monsoon does not penetrate, the air is so dry that less snow falls and the line is a good deal higher.

Himalayan Scenery—Certain things strike any observant traveler in the Himálaya. One is the comparative absence of running or still water, except in the height of the rainy season, away from the large rivers. The slope is so rapid that ordinary falls of rain run off with great rapidity. The mountain scenery is often magnificent and the forests are beautiful, but the absence of water robs the landscape of a charm which would make it really perfect. Where this too is present, as in the valley of the Baás in Kulu and those of the Jhelam and its tributaries in Kashmír and Hazára, the eye has its full fruition of content. Another is the silence of the forests. Bird and beast are there, but they are little in evidence. A third feature which can hardly be missed is the contrast between the northern and the southern slopes. The former will often be clothed with forest while the latter is a bare stony slope covered according to season with brown or green grass interspersed with bushes of indigo, barberry, or the hog plum (*Prunespia utilis*). The reason is that the northern side enjoys much more shade, snow lies longer, and the supply of moisture is therefore greater. The grazier for the same reason is less tempted to fire the hill side in order to promote the growth of grass, a practice which is fatal to all

forest growth. The rich and varied flora of the Himálaya will be referred to later.



Fig. 6. R.Jhelum in Kashmir - View towards Mohand Marg

Muztagh-Karakoram Ranges. —The Muztagh-Karakoram mountains form the northern watershed of the Indus. The range consists of more than one main axis. The name Karakoram is appropriated to the eastern part of the system which originates at E. longitude 79° near the Pangong lake in the Tibetan plateau a little beyond the boundary of Kashmír. Beyond the Karakoram pass (18550 ft.) is a lofty bleak upland with salt lakes dotted over its surface. Through this inhospitable region and over the Karakoram pass and the Sasser-lá (17,500 ft.) the trade route from Yarkand to Leh runs. The road is only open for three months in the year, and the dangers and hardships are great. In 1898 Dr Bullock Workman and his wife marched along it across the Shyok river, up the valley of the Nubra, and over the Sasser-lá to the Karakoram pass. The scenery is an exaggeration of that described by Dr Neve as seen on the road from the Zoji-lá to Leh. There is a powerful picture of its weird repellent grandeur in the Workman's book entitled *In the Ice World of Himálaya* (pp. 28-29, 30-32). The poet who had found ideas for a new Paradise in the Vale of Kashmír might here get suggestions for a new Inferno.

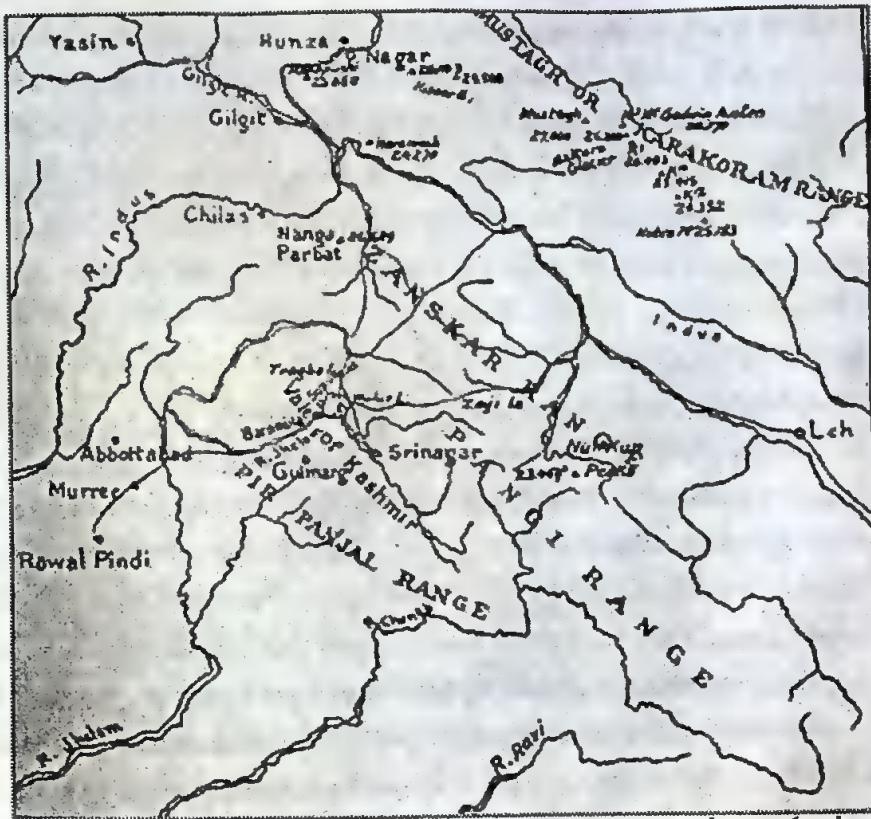


Fig. 8. Mustagh-Karakoram and Himalayan Ranges in Kashmir

The Karakoram range culminates in the north-west near the Muztagh pass in a group of majestic peaks including K₂ or Mount Godwin Austen (28,265 feet), Gasherbrum, and Masherbrum, which tower over and feed the vast Baltoro glacier. The first of these giants is the second largest mountain in the world. The Duke of the Abruzzi ascended it to the height of 24,600 feet, and so established a climbing record. The Muztagh chain carries on the northern bastion to the valley of the Hunza river and the western extremity of the Hindu Kush. It has several peaks exceeding 25,000 feet. The most famous is Rakiposhi which looks down on Hunza from a height of 25,550 feet.

The Hindu Kush —The Muztagh chain from the south-east, the Sarikol from the north-east, and the Hindu Kush from the south-west, meet at a point to the north of Hunza. The last runs westward and south-westward for about 200 miles to the Dorah pass (14,800 feet), separating the valleys which drain into the Indus from the head waters of the Oxus, and Hunza and Gilgit in Kashmir and Chitral in British India from the Afghán province of Wakhan. The highest point in the main axis, Sad

Istragh (24,171 feet), is in this section. But the finest mountain scenery in the Hindu Kush is in the great spurs it thrusts out southwards to flank the glens which feed the Gilgit and Chitrál rivers. Tirach Mír towers above Chitrál to a height of 25,426 feet. From Tibet to the Dorah pass the northern frontier of India is impregnable. It is pierced by one or two difficult trade routes strewn with the bones of pack animals, but no large army has ever marched across it for the invasion of India. West of the Dorah pass the general level of the Hindu Kush is a good deal lower than that of its eastern section. The vital point in the defences of India in this quarter lies near Charikr to the north of Kábul, where the chain thins out, and three practicable passes debouch on the valley of the valley of the Kábul its great strategic importance. The highest of the three passes, the Kaoshan or Hindu Kush (dead Hindu), crosses the chain at an elevation of 14,340 feet. It took its own name from the fate that befell a Hindu army when attempting to cross it, and has handed it onto the whole range. It is the pass which the armies of Alexander and Bábar used. The historical road for the invasion of India on this side has been by Charikár and the valley of the Kábul river to its junction with the Kunar below Jalálábád, thence up the Kunar valley and over one of the practicable passes which connect its eastern watershed with the Panjkora and Swát river valleys, whence the descent on Pesháwar is easy. This is the route by which Alexander led the wing of the Grecian army which he commanded in person, and the one followed by Bábar in 1518-19. Like Alexander, Bábar fought his way through Bajaur, and crossed the Indus above Attock.

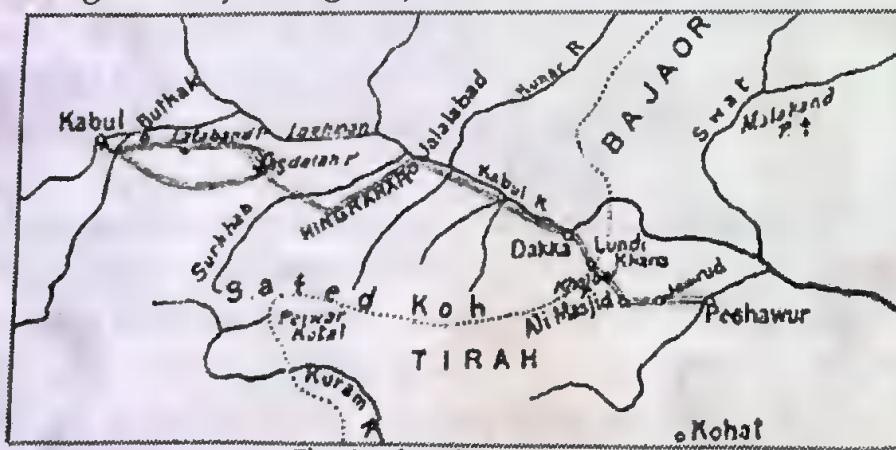


Fig. 9. The Khaibar Road

The Khaibar —A British force advancing on Kábul from Pesháwar has never marched by the Kunar and Kábul valley route. It has always taken the Khaibar road, which only follows the Kábul river for less than one-third of the 170 miles which separate Pesháwar from the amir's capital. The military road from Pesháwar to Landikhána lies far to the south of the river, from which it is shut off by difficult and rugged country held by the Mohmands.

Safed Koh —From Landikhána the political boundary runs south-west to the Safed Koh (white mountain) and is continued westwards along that range to the Paiwar Kotal or pass (8450 feet). The Safed Koh forms the watershed of the Kábul and Kurram rivers. It is a fine pine clad chain with a general level of 12,000 feet, and its skyline is rarely free from snow. It culminates in the west near Paiwar Kotal in Sikarám (15,620 feet). To the west of the Pesháwar and Kohát districts is a tangle of hills and valleys formed by outlying spurs of the Safed Koh. This difficult country is in the occupation of Afrídís and Orakzais, who are under our political control.

The Kurram Valley —The line of advance into Afghánistán through the Kurram valley is easy, and Lord Roberts used it when he marched towards Kábul in 1898. After the war we annexed the valley, leaving however the head waters of the Kurram in Afghán territory. The road to Kábul leaves the river far to the south before it crosses our frontier at Paiwar Kotal.

Wazíristán Hills —Between the Kurram valley and the Gomal river is a large block of very rough mountainous country known as Wazíristán from the turbulent clan which occupies it. In the north it is drained by the Tochí. Westwards of the Tochí valley the country rises into lofty mountains. The upper waters of the Tochí and its affluents drain two fine glens known as Birmal and Shawal to the west of the country of the Mahsud Wazírs. The Tochí valley is the direct route from India to Ghazní, and nine centuries ago, when that decayed town was the capital of a powerful kingdom, it must often have heard the tramp of armed men. The loftiest peaks in Wazíristán, Shuidár (11,000 feet) and Pírghal (11,600 feet), overhang Birmal. Further south, wána, our post in south-west Wazíristán,

overlooks from its plateau the Gomal valley.

The Gomal Pass as a trade route —East of Kajúrí Kach the Gomal flows through tribal territory to the Gomal pass from which it debouches into the plains of the Dera Ismail Khán district “The Gomal route is the oldest of all trade routes. Down it there yearly pours a succession of *káfilas* (caravans) led and followed up by thousands of well-armed Pathán traders, called powindahs, from the plains of Afghánistán to India. The Powindahs mostly belong to the Ghilzai tribes, and are not therefore true Afgháns*. Leaving their women and children encamped within British territory on our border, and their arms in the keeping of our frontier political officials, the Powindah makes his way southwards with his camel loads of fruit and silk, bales of camel and goat hair or sheepskin goods, carpets and other merchandise from Kábul and Bokhára, and conveys himself through the length and breadth of the Indian peninsula.... He returns yearly to the cool summits of the Afghán hills and the open grassy plains, where his countless flocks of sheep and camels are scattered for the summer grazing (Holdich's *India*, pp. 80-81).

Physical features of hilly country between Peháwar and the Gomal river —The physical features of the hill country between Pesháwar and the Gomal pass may best be described in the words of Sir Thomas Holdich:

“Natural landscape beauty, indeed, may here be measured to a certain extent by altitude. The low ranges of sun-scorched, blackened ridge and furrow formation which form the approaches to the higher altitudes of the Afghán upland, and which are almost as regularly laid out by the hand of nature in some parts of the frontier as are the parallels.... Of the engineer who is besieging a fortress —these are by no means ‘things of beauty’, and it is this class of formation and this form of barren desolation that is most familiar to the frontier officer.... Shades of delicate purple and grey will not make up for the absence of the living green of vegetation.... But with higher altitudes a cooler climate and snow-fed soil is found, and as soon as vegetation grasps a root-hold there is the beginning of fine scenery. The upper pine-covered slopes of the Safed Koh are

* They are held to be of Turkish origin.

as picturesque as those of the Swiss Alps; they are crowned by peaks whose wonderful altitudes are frozen beyond the possibility of vegetation, and are usually covered with snow wherever snow can lie. In Wazíristán, hidden away in the higher recesses of its great mountains, are many valleys of great natural beauty, where we find the spreading poplar and the ilex in all the robust growth of an indigenous flora.... Among the minor valleys Birmal perhaps takes precedence by right of its natural beauty. Here are stretches of park-like scenery where grass-covered slopes are dotted with clumps of *deodar* and pine and intersected with rivulets hidden in banks of fern; soft green glades open out to view from every turn in the folds of the hills, and above them the silent watch towers of Pírghal and Shuidár.... Look down from their snow-clad heights across the Afghán uplands to the hills beyond Ghazní." (Holdich's *India*, pp. 81-82)

The sulimán Range —A well-marked mountain chain runs from the Gomal to the extreme south-west corner of the Dera Gházi Khán district where the borders of Biluchistán, Sind, and the Panjáb meet. It culminates forty miles south of the Gomal in the fine Kaisargarh mountain (11,295 feet), which is a very conspicuous object from the plains of the Deraját. On the side of Kaisargarh there is a shrine called Takht I Sulimán or Throne of Solomon, and this is the name by which Englishmen usually know the mountain, and which has been passed on the whole range. Proceeding southwards the general elevation of the chain drops steadily. But Fort Munro, the hill station of the Dera Gházi Khán district, 200 miles south of the Takht, still stands 6300 feet above sea level, and it looks across at the fine peak of Ekbhai, which is more than 1000 feet higher. In the south of the Dera Gházi Khán district the general level of the chain is low, and the Giandári hill, though only 4160 feet above the sea, stands out conspicuously. Finally near where the three jurisdictions meet the hills melt into the Kachh Gandáva plain. Sir Thomas Holdich's description of the rugged Pathán hills applies also to the Sulimán range. Kaisargarh is a fine limestone mountain crowned by a forest of the edible *chilgoza pine*. But the ordinary tree growth, where found at all, is of a much humbler kind, consisting of gnarled olives and dwarf palms.

Passes and torrents in Sulimán Hills —The drainage of the western slopes of the Sulimán range finding no exit on that side has had to wear out ways for itself towards the plains which lie between the foot of the hills and the Indus. This is the explanation of the large number of passes, about one hundred, which lead from the plains into the Sulimán hills. The chief from north to south are the Vehoa, the sangath, the Khair, the Kahá, the Cháchar, and the Sirí, called from the torrents which flow through them to the plains. There is an easy route through the Cháchar to Biluchistán. But unfortunately the water of the torrent is brackish.

Sub Himálaya or Siwáliks —In its lowest ridges the Himálaya drops to a height of about 5000 feet. But the traveler to any of the summer resorts in the mountains passes through a zone of lower hills interspersed sometimes with valleys or "duns." These consist of Tertiary sandstones, clays, and boulder conglomerates, the debris in fact which the Himálaya has dropped in the course of age. To this group of hills and valleys the general name of Siwáliks is given. East of the Jhelam it includes the Náhan hills to the north of Ambála, the low hills of Kángra, Hoshyárpur, Gurdáspur, and Jammu, and the Pabbí hills in Gujrát. But it is to the west of the Jhelam that the system has its greatest extension. Practically the whole of the soil of the plains of the Attock, Ráwalpindí, and Jhelam districts consists of disintegrated Siwálik sandstone, and differs widely in appearance and agricultural quality from the alluvium of the true Panjáb plains. The low hills of these districts belong to the same system, but the Salt Range is only in part Siwálik. Altogether Siwálik deposits in the Panjáb cover an area of 13,000 square miles. Beyond the Indus the hills of the Kohát district and a part of the Sulimán range are of Tertiary age.

The Great Panjáb Plain —The passage from the high-lands to the plains is as a rule abrupt, and the contrast between the two is extraordinary. This is true without qualification of the tract between the Jamna and the Jhelam. It is equally true of British districts west of the Jhelam and south of the Salt Range and of lines drawn from Kálabágh on the west bank of the Indus southwards to Paniála and thence north-west through the Pezu pass to the Wazíristán hills. In all that vast plain, if we except the insignificant hills in the extreme South-west of the province

ending to the north in the historic ridge at Delhi, some hillocks of gneiss near Toshám in Hissár, and the curious little isolated rocks at Kirána, Chiniot, and Sángla near the Chenáb and Jhelam, the only eminences are petty ridges of wind-blown sand and the “*thebs*” or mounds which represent the accumulated debris of ancient village sites. At the end of the Jurassic period and later this great plain was part of a sea bed. Far removed as the Indian ocean now is the height above sea level of the Panjáb plain east of the Jhelam is nowhere above 1000 feet. Delhi and Lahore are both just above the 700 feet line. The hills mentioned above are humble time-worn outliers of the very ancient Aravalli system, to which the hills of Rájputána belong. Kirána and Sángla were already of enormous age, when they were islands washed by the waves of the Tertiary sea. A description of the different parts of the vast Panjáb plain, its great stretches of firm loam, and its tracts of sand and sand hills, which the casual observer might regard as pure desert, will be given in the paragraphs devoted to the different districts.

The Salt Range —The tract west of the Jhelam, and bounded on the south by the Salt Range cis-Indus, and trans-Indus by the lines mentioned above, is of a more varied character. Time worn though the Salt Range has become by the waste of ages, it still rises at Sakesar, near its western extremity, to a height of 5000 feet. The eastern part of the range is mostly in the Jhelam district, and there the highest point is Chail (3700 feet). The hill of Tilla (3242 feet), which is a marked feature of the landscape looking westwards from Jhelam cantonment, is on a spur running north-east from the main chain. The Salt Range is poorly wooded, the dwarf acacia or *phuláhi* (*Acacia modesta*), the olive, and the *sanattha* shrub (*Dodonea viscosa*) are the commonest species. But these jagged and arid hills include some not infertile valleys, every inch of which is put under crop by the crowded population. To geologists the range is of special interest, including as it does at one end of the scale Cambrian beds of enormous antiquity and at the other rocks of Tertiary age. Embedded in the Cambrian strata there are great deposits of rock salt at Kheora, where the Mayo mine is situated. At Kálabágh the Salt Range reappears on the far side of the Indus. Here the salt comes to the surface, and its jagged

pinnacles present a remarkable appearance.

Country north of the Salt Range —The country to the north of the Salt Range included in the districts of Jhelam, Ráwalpindí, and Attock is often ravine bitten and seamed with the white sandy beds of torrents. Generally speaking it is an arid precarious tract, but there are fertile stretches which will be mentioned in the descriptions of the districts. The general height of the plains north of the Salt Range is from 1000 feet to 2000 feet above sea level. The rise between Lahore and Ráwalpindí is just over a thousand feet. Low hills usually form a feature of the landscape, pleasing at a distance or when softened by the evening light, but bare and jagged on a nearer view. The chief hills are the Márgalla range between Hazára and Ráwalpindí to the passage of the Indus at Attock, and therefore a position of considerable strategical importance. The Kálachitta (black and white) chain is so called because the north side is formed of nummulitic limestone and the south mainly of a dark purple sandstone. The best tree-growth is therefore on the north side.

Pesháwar, Kohát, and Bannu —Across the Indus the Pesháwar and Bannu districts are basins ringed with hills and drained respectively by the Kábul and Kurram rivers with their affluents. Between these two basins lies the maze of bare broken hills and valleys which make up the Kohát district. The cantonment of Kohát is 1700 feet above sea level and no hill in the district reaches 5000 feet. Near the Kohát border in the south-west of the Pesháwar district are the Khattak hills, the culmination of which at Ghaibana Sir has a height of 5136 feet, and the military sanitarium of Cherát in the same chain is 600 feet lower. On the east the Maidáni hills part Bannu from Isakhel, the trans-Indus *tahsíl* of Mianwáli, and to the south the Marwat hills divide it from Dera Ismail Khán. Both are humble ranges. The highest point in the Marwat hills is Shekhdudín, a bare and dry limestone rock rising to an elevation of over 4500 feet.

CHAPTER III

RIVERS

The Panjáb Rivers —"Panjáb" is a Persian compound word, meaning "five waters", and strictly speaking the word denotes the country between the valley of the Jhelam and that of the Sutlej. The intermediate rivers from west to east are the Chenáb, the Ráví, and the Biás. Their combined waters at last flow into the Panjnad or "five rivers" at the south-west corner of the Multán district, and the volume of water which 44 miles lower down the Panjnad carries into the Indus is equal to the discharge of the latter. The first Aryan settlers knew this part of India as the land of the seven rivers (*sapta sindhavas*), adding to the five mentioned above the Indus and the Sarasvatí, which is now a petty stream.

River Valleys. —The cold weather traveler who is carried from Delhi to Ráwalpindí over the great railway bridges at points chosen because there the waters of the rivers are confined by nature, or can be confined by art, within moderate limits, has little idea of what one of these rivers is like in flood time. He sees that, even at such favoured spots, between the low banks there is a stretch of sand far exceeding in width the main channel, where a considerable volume of water is running, and the minor depressions, in which a sluggish and shallow flow may still be found. If, leaving the railway, he crosses a river by some bridge of boats or local ferry, he will find still wider expanses of sand sometimes bare and dry and white, at others moist and dark and covered with dwarf tamisk. He may notice that, before he reaches the sand and the tamarisk scrub, he leaves by a gentle or abrupt descent the dry uplands, and passes into a lower, greener, and perhaps to his inexperienced eye more fertile seeming

tract. This is the valley, often miles broad, through which the stream has moved in ever-shifting channels in the course of centuries. He finds it hard to realize that, when the summer heats melt the Himalayan snows, and the monsoon currents, striking against the northern mountain walls, are precipitated in torrents of rain, the rush of water to the plains swells the river 20, 30, 40, or even 50 fold. The sandy bed then becomes full from bank to bank, and the silt laden waters spill over into the cultivated lowlands beyond. Accustomed to the stable streams of his own land, he cannot conceive the risks the riverside farmer in the Panjab runs of having fruitful fields smothered in a night with barren sand, or lands and well and house sucked into the river-bed. So great and sudden are the changes, bad and good, wrought by river action that the loss and gain have to be measured up year by year for revenue purposes. Now is the visitor likely to imagine that the main channel may in a few seasons become a quite subsidiary or wholly deserted bed. Like all streams, e.g. the po, which flow from the mountains into a flat terrain, the Panjab rivers are perpetually silting up their beds, and thus, by their own action becoming diverted into new channels or into existing minor ones, which are scoured out afresh. If our traveler, leaving the railway at Rawalpindi, proceeds by *tonga* to the capital of Kashmir, he will find between Kohala and Baramulla another surprise awaiting him. The noble but sluggish river of the lowlands, which he crossed at the town of Jhelam, is here a swift and deep torrent, flowing over a boulder bed, and swirling round waterworn rocks in a gorge hemmed in by mountains. That is the typical state of the Himalayan rivers, though the same Jhelam above Baramulla is an exception, flowing there sluggishly through a very flat valley into a shallow lake.

The Indus Basin—The river Sindh (Sanskrit, Sindhu), more familiar to us under its classical name of the Indus, must have filled with astonishment every invader from the west, and it is not wonderful that they called after it the country that lay beyond. Its basin covers an area of 373,000 square miles. Confining attention to Asia these figures, large though they seem, are far exceeded by those of the Yangtsze-Kiang. The area of which a description is attempted in this book is, with the exception of a strip along the Jamna and the part of Kashmir lying beyond the Muztagh-

Karakoram range, all included in the Indus basin. But it does not embrace the whole of it. Part is in Tibet, part in Afghanistan and Biluchistan, and part in Sindh, through which province the Indus flows for 450 miles, or one-quarter of its whole course of 1800 miles. It seems likely that the Jamna valley was not always an exception, or at least that river once flowed westwards through Rajputana to the Indian ocean. The five great rivers of the Panjab all drain into the Indus, and the Ghagar with its tributary, the Sarusti, which now, even when in flood, loses itself in the sands of Bikaner, probably once flowed down the old Hakra bed in Bahawalpur either into the Indus or by an independent bed now represented by an old flood channel of the Indus in Sindh, the Hakro or Nara, which passes through the Rann of Kachh.

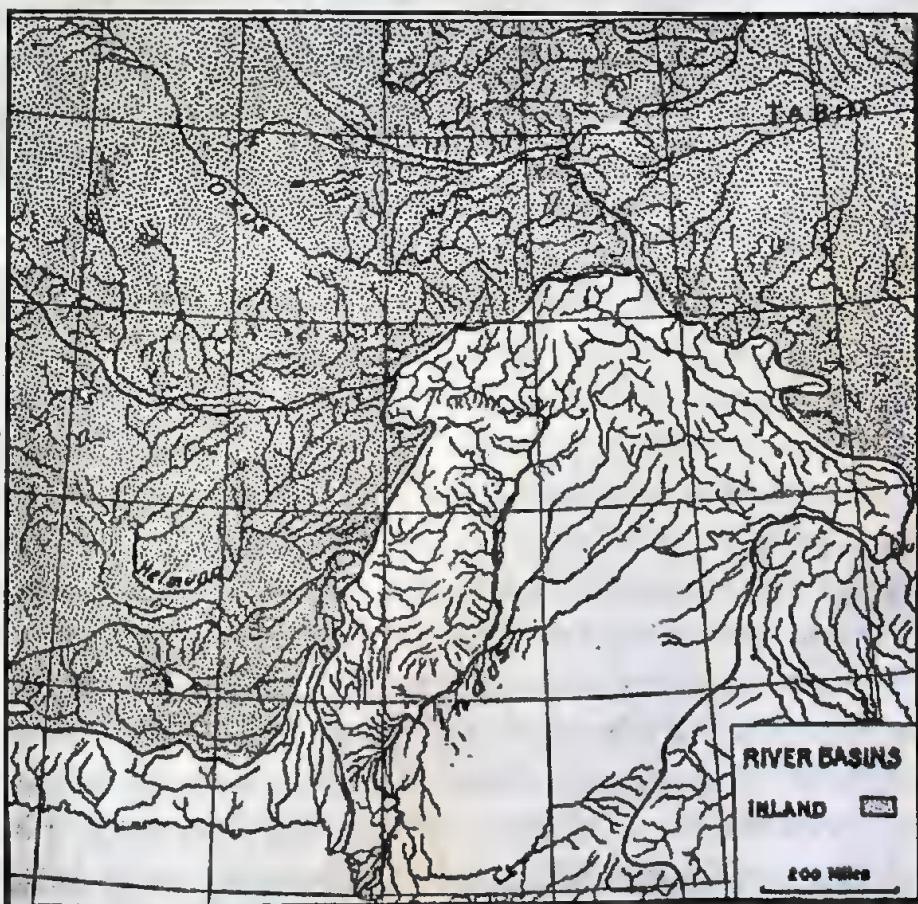


Fig. 10. Panjab Rivers

The Indus outside British India—To the north of the Manasarowar lake in Tibet is Kailas, the Hindu Olympus. On the side of this mountain the Indus is said to rise at a height of 17,000 feet. After a course of 200

miles or more it crosses the south-east boundary of the Kashmir State at an elevation of 13,800 feet. From the Kashmir frontier to Mt Haramosh west of Gilgit it flows steadily to the north-west for 350 miles. After 125 miles Leh, the capital of Ladakh, is reached at a height of 10,500 feet, and here the river is crossed by the trade route to Yarkand. A little below Leh the Indus receives the Zanskar, which drains the south-east of Kashmir. After another 150 miles it flows through the basin, in which Skardo, the principal town in Baltistan, is situated. Above Skardo a large tributary, the Shyok, flows in from the east at an elevation of 8000 feet. The Shyok and its affluent, the Nubra, rise in the giant glaciers to the south-west of the Karakoram pass. After the Skardo basin is left behind the descent is rapid. The river rushes down a tremendous gorge, where it appears to break through the western Himalaya, skirts Haramosh, and at a point twenty-five miles east of Gilgit bends abruptly to the south. Shortly after it is joined from the west by the Gilgit river, and here the bed is about 4000 feet above sea level. Continuing to flow south for another twenty miles it resumes its westerly course to the north of Nanga Parvat and persists in it for 100 miles. Our political post of Chilas lies in this section on the south bank. Fifty or sixty miles west of chilas the Indus turns finally to the south. From Jalkot, where the Kashmir frontier is left, to Palosi below the Mahaban mountain it flows for a hundred miles through territory over which we only exercise political control. Near Palosi, 812 miles from the source, the river enters British India. In Kashmir the Indus and the Shyok in some places flow placidly over alluvial flats and at others with a rapid and broken current through narrow gorges. At Skardo their united stream is said, even in winter, to be 500 feet wide and nine or ten feet deep. If one of the deep gorges, as sometimes happens, is choked by a landslip, the flood that follows when the barrier finally bursts may spread devastation hundreds of miles away. To the north of the fertile Chach plain in Attock there is a wide stretch of land along the Indus, which still shows in its stony impoverished soil the effects of the great flood of 1841.



Fig. 11. The Indus at Attock

The Indus in British India—After reaching British India the Indus soon becomes the boundary dividing Hazara and Peshawar, two districts of the North West Frontier Province. Lower down it parts Peshawar from the Panjab district of Attock. In this section after a time the hills recede on both sides, and the stream is wide and so shallow that it is fordable in places in the cold weather. There are islands, ferry boats and rafts can ply, and the only danger is from sudden freshets. Ohind, where Alexander crossed, is in this section. A more famous passage is at Attock just below the junction of the Kabul river. Here the heights again approach the Indus on either bank. The volume of water is vastly increased by the union of the Kabul river, which brings down the whole drainage of the southern face of the Hindu Kush. From the north it receives near Jalalabad the Kunar river, and near Charasadda in Peshawar the Swat, which with its affluent the Panjkora drains Dir, Bajaur, and Swat. In the cold weather looking north-wards from the Attock fort one sees the Kabul or Landai as a blue river quietly mingling with the Indus, and in the angle between them a stretch of white sand. But during floods the junction is the scene of a wild turmoil of waters. At Attock there are a railway bridge, a bridge of boats, and ferry. The bed of the stream is 2000 feet over sea level. For ninety miles below Attock the river is confined between bare and broken hills, till it finally emerges into the plains from the gorge above Kalabagh, where the Salt Range impinges on the left bank. Between Attock and Kalabagh the right bank is occupied by Peshawar and Kohat and the left by Attock and Mianwali. In this section the Indus is

joined by the Haro and Soan torrents, and spanned at Khushalgarh by a railway bridge. This is the only other masonry bridge crossing it is the Panjab. Elsewhere the passage has to be made by ferry boats or by boat bridges, which are taken down in the rainy season. At Kalabagh the height above sea level is less than 1000 feet. When it passes the western extremity of the Salt Range the river spreads out into a wide lake-like expanse of waters. It has now performed quite half of its long journey. Henceforth it receives no addition from the east till the Panjnad in the south-west corner of the Muzaffargarh district brings to it the whole tribute of the five rivers of the Panjab. Here, though the Indian ocean is still 500 miles distant, the channel is less than 300 feet above the sea. From the west it receives an important tributary in the Kurram, which, with its affluent the Tochi, rises in Afghanistan. The torrents from the Suliman Range are mostly used up for irrigation before they reach the Indus, but some of them mingle their waters with it in high floods Below Kalabagh the Indus is a typical lowland river of great size, with many sandy islands in the bed and a wide valley subject to its inundations. Opposite Dera Ismail Khan the valley is seventeen miles across. As a plains river the Indus runs at first through the Mianwali district of the Panjab, then divides Mianwali from Dera Ismail Khan, and lastly parts Muzaffargarh and the Bahawalpur State from the Panjab frontier district of Dera Ghazi Khan.



Fig. 12. Indus at Kafirkot, D.I. Khan dt.

The Jhelam —The Jhelam, the most westernly of the five rivers of the Panjab, is called the Veth in Kashmir and locally in the Panjab plains the Vehat. These names correspond to the Bihat of the Muhammadan historians and the Hydaspes of the Greeks, and all go back to the Sanskrit Vitasta. Issuing from a deep pool at Vernag to the east of Islamabad in Kashmir it becomes navigable just below that town, and flows north-west in a lazy stream for 102 miles through Srinagar, the summer capital, into the Wular lake, and beyond it to Baramulla. The banks are quite low and often cultivated to the river's edge. But across the flat valley there is on either side a splendid panorama of mountains. From Baramulla the character of the Jhelam suddenly changes, and for the next 70 miles of Kohala, where the traveler crosses by a fine bridge into the Panjab, it rushes down a deep gorge, whose sides are formed by the Kajnag mountains on the right, and the Pir Panjal on the left, bank. Between Baramulla and Kohala there is a drop from 5000 to 2000 feet. At Domel, the stage before Kohala the Jhelam receives from the north the waters of the Kishnganga, and lower down it is joined by the Kunhar, which drains the Kagan glen in Hazara. A little above Kohala it turns sharply to the south, continuing its character as a mountain stream hemmed in by the hills of Rawalpindi on the right bank and of the Punch State on the left. The hills gradually sink lower and lower, but on the left side only disappear a little above the cantonment of Jhelam, where there is a noble railway bridge. From Jhelam onwards the river is of the usual plains' type. After dividing the districts of Jhelam (right bank) and Gujrat (left), it flows through the Shahpur and Jhang districts, falling finally into the Chenab at Trimmu, 450 miles from its source. There is a second railway bridge at Haranpur on the Sind Sagar line, and a bridge of boats at Khushab, in the Shahpur district. The noblest and most varied scenery in the north-west Himalaya is in the catchment area of the Jhelam. The Kashmir valley and the valleys which drain into the Jhelam from the north, the Liddar, the Lolab, the Sind, and the Kagan glen, display a wealth of beauty unequalled elsewhere. Nor does this river wholly lose its association with beauty in the plains. Its very rich silt gives the lands on its banks the green charm of rich crops and pleasant trees.

The Chenab—The Chenab (more properly Chinab or river of China) is the Asikni of the Vedas and the Akesines of the Greek historians. It is formed by the union of the Chandra and Bhaga, both of which rise in Lahul near the Baralacha pass. Having become the Chandra-bhaga the river flows through Pangi in Chamba and the south-east of Kashmir. Near Kishtwar it breaks through the pir panjal range, and thenceforwards receives the drainage of its southern slopes. At Akhnur it becomes navigable and soon after it enters the Panjab district of Sialkot. A little later it is joined from the west by the Tawi, the stream above which stands Jammu, the winter capital of Kashmir. The Chenab parts Sialkot and Gujranwala on the left bank from Gujrat and Shahpur on the right. At Wazirabad, near the point where Sialkot, Gujrat, and Gujranwala met, it is crossed by the Alexandra railway bridge. Leaving Shahpur and Gujranwala behind, the Chenab flows through Jhang to its junction with the Jhelam at Trimmu. In this section there is a second railway bridge at Chund Bharwana. The united stream runs on under the name of Chenab to be joined on the north border of the Multan district by the Ravi and on its southern border by the Sutlej. Below its junction with the latter the stream is known as the Panjnad. In the plains the Chenab cannot be called an attractive river, and its silt is far inferior to that of the Jhelam.

The Ravi—The ravi was known to the writers of the Vedic hymns as the Parushmi, but is called in classical Sanskrit Iravati, whence the Hydraotes of the Greek historians. It rises near the Rotang pass in Kangra, and flows north-west through the southern part of Chamba. Below the town of Chamba, it runs as a swift slate-blue mountain stream, and here it is spanned by a fine bridge. Passing on to the north of the hill station of Dalhousie it reaches the Kashmir border, and turning to the south-west flows along it to Basoli where Kashmir, Chamba, and the British district of Gurdaspur meet. At this point it is 2000 feet above the sea level. It now forms the boundary of Kashmir and Gurdaspur, and finally near Madhopur, where the head-works of the Bari Doab canal are situated, it passes into the Gurdaspur district. Shortly after it is joined from the north by a large torrent called the Ujh, which rises in the Jammu hills. After reaching the Sialkot border the Ravi parts that district first from

Gurdaspur and then from Amritsar, and, passing through the west of Lahore, divides Montgomery and Lyallpur, and flowing through the north of Multan joins the Chenab near the Jhang border. In Multan there is a remarkable straight reach in the channel known as the Sidhnai, which has been utilized for the site of the head-works of a small canal. The Degh, a torrent which rises in the Jammu hills and has a long course through the Sialkot and Gujranwala districts, joins the Ravi when in flood in the north of the Lyallpur district. But its waters will now be diverted into the river higher up in order to safeguard the Upper Chenab canal. Lahore is on the left bank of the Ravi. It is a mile from the cold weather channel, but in high floods the waters have often come almost up to the Fort. At Lahore the North Western Railway and the Grand Trunk Road are carried over the Ravi by masonry bridges. There is a second railway bridge over the Sidhnai reach in Multan. Though the Ravi, like the Jhelam, has a course of 45° miles, it has a far smaller catchment area, and is really a somewhat insignificant stream. In the cold weather the canal takes such a heavy toll from it that below Madhopur the supply of water is mainly drawn from the Ujh, and in Montgomery one may cross the bed dryshod for months together. The valley of the Ravi is far narrower than those of the rivers described in the preceding paragraphs, and the floods are most uncertain, but when they occur are of very great value.



Fig. 13. Fording the River at Lahore

The Bias—The bias (Sanskrit, Vipasa; Greek, Hyphasis) rises near the Rotang pass at a height of about 13,000 feet. Its head-waters are divided from those of the Ravi by the Bara Bangahal range. It flows for about sixty miles through the beautiful Kulu valley to Larji (3000 feet). It has at first a rapid course, but before it reaches Sultanpur (4000 feet), the chief village in Kulu, some thirty miles from the source, it has become, at least in the cold weather, a comparatively peaceful stream fringed with alder thickets. Heavy floods, however, sometimes cover fields and orchards with sand and boulders. There is a bridge at Manali (6100 feet), a very lovely spot, another below Nagar, and a third at Larji. Near Larji the river turns to the west down a bold ravine and becomes for a time the boundary between Kulu and the Mandi State. Near the town of Mandi, where it is bridged, it bends again, and winds in a north-west and westerly direction through low hills in the south of Kangra till it meets the Siwaliks on the Hoshypur border. In this reach there is a bridge of boats at Dera Gopipur on the main road from Jalandhar and Hoshypur to Dharmesala. Elsewhere in the south of Kangra the traveler can cross without difficulty on a small bed supported on inflated skins. Sweeping round the northern end of the Siwaliks the Bias, having after long parting again approached within about fifteen miles of the Ravi, turns definitely to the south, forming henceforth the dividing line between Hoshypur and Kapurthala (left bank) and Gurdaspur and Amritsar (right). Finally above the Harike ferry at a point where Lahore, Amritsar, Ferozepur, and Kapurthala nearly meet, it falls into the Sutlej. The North Western Railway crosses it by a bridge near the Bias station and at the same place there is a bridge of boats for the traffic on the Grand Trunk Road. The chief affluents are the Chakki, the torrent which travelers to Dharmesala cross by a fine bridge twelve miles from the rail-head at Pathankot, and the Black Bein in Hoshypur and Kapurthala. The latter is a winding drainage channel, which starts in a swamp in the north of the Hoshypur district. The Bias has a total course of 390 miles. Only for about eighty miles or so is it a true river of the plains, and its floods do not spread far.

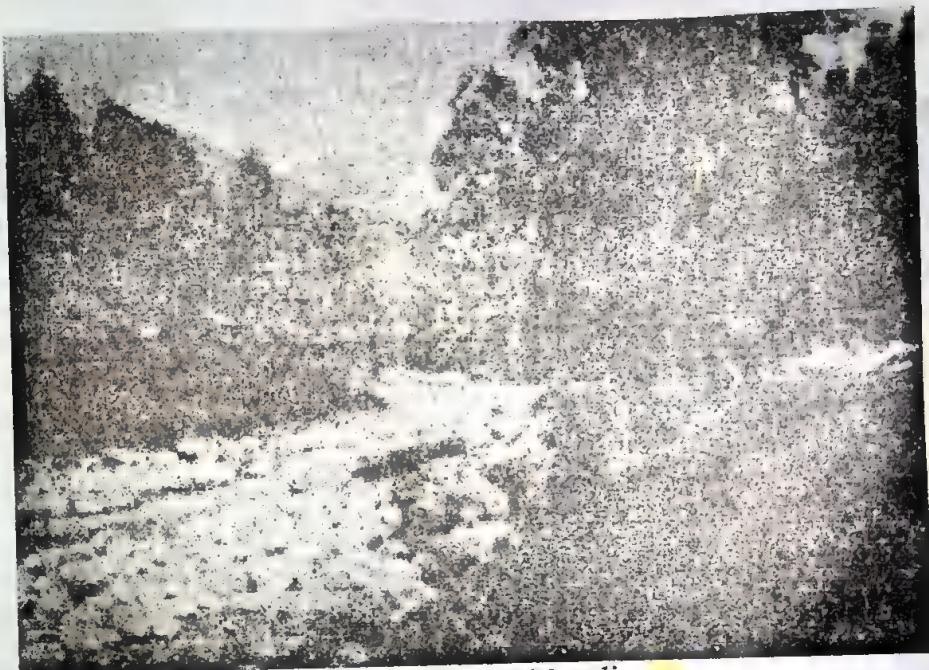


Fig. 14. Bias at Manali

The Sutlej —The Sutlej is the shatadru of Vedic hymns and the zaradros of Greek writers. The peasant of the Panjab plains knows it as the Nili or Ghara. After the Indus it is the greatest of Panjab rivers, and for its source we have to go back to the Manasarowar lakes in Tibet. From thence it flows for 200 miles in a north-westerly direction to the British frontier near Shipki. A little beyond the Spiti river brings it the drainage of the large tract of that name in Kangra and of part of Western Tibet. From Shipki it runs for forty miles in deep gorges through Kunawar in the Bashahr State to Chini, a beautiful spot near the Wangtu bridge, where the Hindustan-Tibet road crosses to the left bank. A little below Chini the Baspa flows in from the south-east. The fall between the source and Chini is from 15,000 to 7500 feet. There is magnificent cliff scenery at Roji in this reach. Forty miles below Chini the capital of Bashahr, Rampur, on the south bank, is only 3300 feet above sea level. There is a second bridge at Rampur, and from about this point the river becomes the boundary of Bahahr and Kulu, the route to which from Simla passes over the Luri bridge (2650 feet) below Narkanda. Beyond Luri the Sutlej runs among low hills through several of the Simla Hill States. It pierces the Siwaliks at the Hoshiarpur border and then turns to the south, maintaining that trend till Rupar and the head-works of the Sirhind canal are

reached. For the next hundred miles to the Bias junction the general direction is west. Above the Harike ferry the Sutlej again turns, and flows steadily, though with many windings, to the south-west till it joins the Chenab at the south corner of the Multan district. There are railway bridges at Phillaur, Ferozepur, and Adamwahan. In the plains the Sutlej districts are on the right bank Hoshiarpur, Jalandhar, Lahore, and Montgomery, and on the left Ambala, Ludhiana and Ferozepur. Below Ferozepur the river divides Montgomery and Multan from Bahawalpur (left bank). The Sutlej has a course of 900 miles, and a large catchment area in the hills. Notwithstanding the heavy toll taken by the Sirhind canal, its floods spread pretty far in Jalandhar and Ludhiana and below the Bias junction many monsoon canals have been dug which inundate a large area in the lowlands of the districts on either bank and of Bahawalpur. The dry bed of the Hakra, which can be traced through Bahawalpur, Bikaner, and Sindh, formerly carried the waters of the Sutlej to the sea.

The Ghagar and the Sarusti —The Ghagar, once a tributary of the Hakra, rises within the Sirmur State in the hills to the east of Kalka. A few miles south of Kalka it crosses a narrow neck of the Ambala district, and the bridge on the Ambala-Kalka railway is in this section. The rest of its course, till it loses itself in the sands of Bikaner, is chiefly in Patiala and the Karnal and Hissar districts. It is joined by the Umla torrent in Karnal and lower down the Sarusti units with it is Patiala just beyond the Karnal border. It is hard to believe that the Sarusti of to-day is the famous Sarasvati of the Vedas, though the little ditch-like channel that bears the name certainly passes beside the sacred sites of Thanesar and Pehowa. A small sandy torrent bearing the same name rises in the low hills in the north-east, of the Ambala district, but it is doubtful if its waters, which finally disappear into the ground, ever reach the Thanesar channel. That seems rather to originate in the overflow of a rice swamp in the plains, and in the cold weather the bed is usually dry. In fact, till the Sarusti receives above Pehowa the floods of the Markanda torrent, it is a most insignificant stream. The Markanda, when in flood, carries a large volume of water, and below the junction the small channel of the Sarusti cannot carry the tribute received, which spreads out into a shallow lake called the

Sainsa *jhil*. This has been utilized for the supply of the little Sarusti canal, which is intended to do the work formerly effected in a rude way by throwing *bands* or embankments across the bed of the stream, and forcing the water over the surrounding lands. The same wasteful form of irrigation was used on a large scale on the Ghagar and is still practiced on its upper reaches. Lower down earthen *bands* have been superceded by a masonry weir at Out in the Hissar district. The northern and southern Ghagar canals, which irrigate lands in Hissar and Bikaner, take off from this weir.

Action of Torrents —The Ghagar is large enough to exhibit all the three stages which a *cho* or torrent of intermittent flow passes through. Such a stream begins in the hills with a well-defined boulder-strewn bed, which is never dry. Reaching the plains the bed of a *cho* becomes a wide expanse of white sand, hardly below the level of the adjoining country, with a thread of water passing down it in the cold weather. But from time to time in the rainy season the channel is full from bank to bank and the waters spill far and wide over the fields. Sudden spates sometimes sweep away men and cattle before they can get across. If, as in Hoshypur, the *chos* flow into a rich plain from hills composed of friable sandstone and largely denuded of tree-growth, they are in their second stage most destructive. After long delay an Act was passed in 1900, which gives the government large powers for the protection of trees in the Siwaliks and the reclamation of torrent beds in the plains. The process of recovery cannot be rapid, but a measure of success has already been attained. It must not be supposed that the action of *chos* in this second stage is uniformly bad. Some carry silt as well as sand, and the very light loam which the great Markanda *cho* has spread over the country on its banks is worth much more to the farmer than the stiff clay it has overlaid. Many *chos* do not pass into the third stage, when all the sand has been dropped, and the bed shrinks into a narrow ditch-like channel with steep clay banks. The inundations of torrents like the Degh and the Ghagar after this stage is reached convert the soil into a stiff impervious clay, where flood-water will lie for weeks without being absorbed into the soil. In Karnal the wretched and fever-stricken tract between the Ghagar and the Sarusti

known as the Naili is of this character.

The Jamna—The Jamna is the Yamuna of Sanskrit writers. Ptolemy's and Pliny's versions, Diamouna and Jomanes, do not deviate much from the original. It rises in the Kumaon Himalaya, and, where it first meets the frontier of the Simla Hill States, receives from the north a large tributary called the Tons. Henceforth, speaking broadly, the Jamna is the boundary of the Panjab and the United Provinces. On the Panjab bank are from north to south the Sirmur State, Ambala, Karnal, Rohtak, Delhi, and Gurgaon. The river leaves the Panjab where Gurgaon and the district of Mathra, which belongs to the United Provinces, meet, and finally falls into the Ganges at Allahabad. North of Mathra Delhi is the only important town on its banks. The Jamna is crossed by railway bridges between Delhi and Meerut and between Ambala and Saharanpur.

Changes in Rivers.—Allusion has already been made to the changes which the courses of Panjab rivers are subject to in the plains. The Indus below Kalabagh once ran through the heart of what is now the Thar desert. We know that in 1245 A.D. Multan was in the Sind Sagar Doab between the Indus and the united streams of the Jhelam, Chenab, and Ravi. The Bias had then no connection with the Sutlej, but ran in a bed of its own easily to be traced to-day in the Montgomery and Multan districts, and joined the Indus between Multan and Uch. The Sutlej was still flowing in the Hakra bed. Indeed its junction with the Bias near Harike, which probably led to a complete change in the course of the Bias, seems only to have taken place within the last 150 years.*

*Raverty's "The Mehran of Sind and its Tributaries," in *Journal of Asiatic Society of Bengal*, 1897.

CHAPTER IV

GEOLOGY AND MINERAL RESOURCES

Extent of Geological Record —Although the main part of the Panjab plain is covered by a mantle of comparatively recent alluvium, the provinces described in this book display a more complete record of Indian geological history than any other similar area in the country. The variety is so great that no systematic or sufficient description could be attempted in a short chapter, and it is not possible, therefore, to do more in these few pages than give brief sketches of the patches of unusual interest.

Aravalli System —In the southern and south-eastern districts of the Panjab there are exposures of highly folded and metamorphosed rocks which belong to the most ancient formations in India. These occupy the northern end of the Aravalli hills, which form but a relic of what must have been at one time a great mountain range, stretching roughly south-south-west through Rajputana into the Bombay Presidency. The northern ribs of the Aravalli series disappear beneath alluvial cover in the Delhi district, but the rocks still underlie the plains to the west and north-west, their presence being revealed by the small promontories that peep through the alluvium near the Chenab river, standing up as small hills near Chiniot in the Shahpur, Jhang, and Lyallpur districts.

The Salt Range in the Jhelam and Shahpur districts, with a western continuation in the Mianwali district to and beyond the Indus, is the most interesting part of the Panjab to the geologist. It contains notable records of three distinct eras in geological history. In association with the well-known beds of rock-salt, which are being extensively mined at Kheora,

occur the most ancient fossiliferous formations known in India, corresponding in age with the middle and lower part of the Cambrian system of Europe. These very ancient strata immediately overlie the red marls and associated rock-salt beds, and it is possible that they have been thrust over bodily to occupy this position, as we have no parallel elsewhere for the occurrence of great masses of salt in formation older than the Cambrian.

The second fragment of geological history preserved in the Salt Range is very much younger, beginning with rocks which were formed in the later part of the Carboniferous period. The most remarkable feature in this fragment is a boulder-bed, resting unconformably on the Cambrian strata and including boulders of various shapes and sizes, which are often faceted and striated in a way indicative of glacial action. Several of the boulders belong to rocks of a peculiar and unmistakable character, such as are found *in situ* on the western flanks of the Aravalli Range, some 750 miles to the south. The glacial conditions which gave rise to these boulder-beds were presumably contemporaneous with those that produced the somewhat similar formation lying at the base of the great coal-bearing system in the Indian peninsula. The glacial boulder-bed thus offers indirect evidence as to the age of the Indian coal-measures, for immediately above this bed in the Salt Range there occur sandstones containing fossils which have affinities with the Upper Carboniferous formations of Australia, and on these sandstones again there lie alternations of shales and limestones containing an abundance of fossils that are characteristic of the Permo-Carboniferous rock of Russia. These are succeeded by an apparently conformable succession of beds of still younger age, culminating in a series of shales, sandstones, and lime-stones of unmistakably Triassic age.

There is then an interruption in the record, and the next younger series preserved occurs in the western part of the Salt Range as well as in the hills beyond the Indus. This formation is of Upper Jurassic age, corresponding to the well-known beds of marine origin preserved in Cutch. Then follows again a gap in the record, and the next most interesting series of formations found in the Salt Range become of great impor-

tance from the economic as well as from the purely scientific point of view; these are the formations of Tertiary age.

The oldest of the Tertiary strata include a prominent limestone containing Nummulitic fossils, which are characteristic of these Lower Tertiary beds throughout the world. Here, as in many parts of North-Western India, the Nummulitic limestones are associated with coal which has been largely worked. The country between the Salt Range plateau and the hilly region away to the north is covered by a great stretch of comparatively young Tertiary formations, which were laid down in fresh water after the sea had been driven back finally from this region. The incoming of fresh-water conditions was inaugurated by the formation of beds which are regarded as equivalent in age to those known as the Upper Nari in Sind and Eastern Baluchistan, but the still later deposits, belonging to the well-known Siwalik series, are famous on account of the great variety and large size of many of the vertebrate fossil remains which they have yielded. In these beds to the north of the Salt Range there have been found remains of Dinothereum, forms related to the ancestors of the giraffe and various other mammals, some of them, like the Sivatherium, Mastodon, and Stegodon, being animals of great size. On the northern side of the Salt Range three fairly well-defined divisions of the Siwalik series have been recognized, each being conspicuously fossiliferous — a feature that is comparatively rare in the Siwalik hills further to the south-east, where these rocks were first studied. The Siwalik series of the Salt Range are thus so well developed that this area might be conveniently regarded as the type succession for the purpose of correlating isolated fragmentary occurrences of the same general series in northern and western India. To give an idea as to the age of these rocks, it will be sufficient to mention that the middle division of the series corresponds roughly to the well-known deposits of Pikermi and Samos.

Kashmir deserves special mention, as it is a veritable paradise for the geologist. Of the variety of problems that it presents one might mention the petrological questions connected with the intrusion of the great masses of granite, and their relation to the slates and associated metamorphic rocks. Of fossiliferous systems there is a fine display of material ranging

in age from Silurian to Upper Trias, and additional interest is added by the long-continued volcanic eruptions of the "Panjal trap". Students of recent phenomena have at their disposal interesting problems in physiography, including a grand display of glaciers, and the extensive deposits of so-called *karewas*, which appear to have been formed in drowned valleys, where the normal fluvial conditions are modified by those characteristic of lakes. The occurrence of sapphires in Zanskar gives the State also an interest to the mineralogist and connoisseur of gem-stones.

Of this kaleidoscopic assemblage of questions the ones of most immediate interest are connected with the Silurian-Trias succession in the Kashmir valley, for here we have a connecting-link between the marine formations of the Salt Range area and those which are preserved in greater perfection in Spiti and other parts of the Tibetan highlands, stretching away to the south-east at the back of the great range of crystalline snow-covered peaks.

In this interesting part of Kashmir the most important feature to Indian geologists is the occurrence of plant remains belonging to genera identical with those that occur in the lower part of the great coal-bearing formation of Peninsular India, known as the Gondwana system. Until these discoveries were made in Kashmir about ten years ago the age of the base of the Gondwanas was estimated only on indirect evidence, partly due to the assumption that glacial conditions in the Salt Range and those at the base of the Gondwanas were contemporaneous, and partly due to analogy with the coal measures of Australia and South Africa. In Kashmir the characteristic plant remains of the Lower Gondwanas are found associated with marine fossils in great abundance, and these permit of a correlation of the strata with the upper part of the Carboniferous system of the European standard stratigraphical scale.

Kashmir seems to have been near the estuary of one of the great rivers that formerly flowed over the ancient continent of *Gondwanaland* (when India and South Africa formed parts of one continental mass) into the great Eurasian Ocean known as *Tethys*. As the deposits formed in this great ocean give us the principal part of our data for forming a standard stratigraphical scale, the plants which were carried out to sea become witnesses of the kind of flora that flourished during the main In-

dian coal period; they thus enable us with great precision to fix the position of the fresh-water Gondwanas in comparison with the marine succession.

Spiti. —With a brief reference to one more interesting patch among the geological records of this remarkable region, space will force us to pass on to consideration of minerals of economic value. The line of snow-covered peaks, composed mainly of crystalline rocks and forming a core to the Himalaya in a way analogous to the granitic core of the Alps, occupies what was once apparently the northern shore of Gondwanaland, and to the north of it there stretched the great ocean of Tethys, covering the central parts of Asia and Europe, one of its shrunken relics being the present Mediterranean Sea. The bed of this ocean throughout many geological ages underwent gradual depression and received the sediments brought down by the rivers from the continent which stretched away to the south. The sedimentary deposits thus formed near the shore-line or further out in deep water attained a thickness of well over 20,000 feet, and have been studied in the *tabsil* of Spiti, on the northern border of Kumaon, and again on the eastern Tibetan plateau to the north of Darjeeling. A reference to the formations preserved in Spiti may be regarded as typical of the geological history and the conditions under which these formations were produced.

Succession of Fossiliferous Beds. —In age the fossiliferous beds range from Cambrian right through to the Tertiary epoch; between these extremes no single period was passed without leaving its records in some part of the great east-to-west Tibetan basin. At the base of the whole succession there lies a series of schists which have been largely metamorphosed, and on these rest the oldest of the fossiliferous series, which, on account of their occurring in the region of snow, has been named the *Haimanta system*. The upper part of the Haimanta system has been found to contain the characteristic trilobites of the Cambrian period of Europe. Over this system lie beds which have yielded in succession Ordovician and Silurian fossils, forming altogether a compact division which has been distinguished locally as the *Muth system*. Then follows the so-called *Kanawar system*, which introduces Devonian conditions, followed by fossils charac-

teristic of the well-known mountain limestone of Europe.

Then occurs a break in the succession which varies in magnitude in different localities, but appears to correspond to great changes in the physical geography which widely affect the Indian region. This break corresponds roughly to the upper part of the Carboniferous system of Europe, and has been suggested as a datum line for distinguishing in India an older group of fossiliferous systems below (formed in an area that has been distinguished by the name *Dravidian*), from the younger group above, which has been distinguished by the name *Aryan*.

During the periods that followed this interruption the bed of the great Eurasian Ocean seems to have subsided persistently though intermittently. As the various sediments accumulated the exact position of the shore-line must have changed to some extent to give rise to the conditions favourable for the formation at one time of limestone, at another of shale and at other times of sandy deposits. The whole column of beds, however, seems to have gone on accumulating without any folding movements, and they are consequently now found lying apparently in perfect conformity stage upon stage, from those that are Permian in age at the base, right through the Mesozoic group, till the time when Tertiary conditions were inaugurated and the earth movements began which ultimately drove back the ocean and raised the bed, with its accumulated load of sediments, into the great folds that now form the Himalayan Range. This great mass of Aryan strata includes an enormous number of fossil remains, giving probably a more complete record of the gradual changes that came over the marine fauna of Tethys than any other area of the kind known. One must pass over the great number of interesting features still left unmentioned, including the grand architecture of the Sub-Himalaya and the diversity of formations in different parts of the Frontier Province; for the rest of the available space must be devoted to a brief reference to the minerals of value.

Rock-salt, which occurs in abundance, is possibly the most important mineral in this area. The deposits most largely worked are those which occur in the well-known Salt Range, covering parts of the districts of Jhelam, Shahpur, and Mianwali. Near the village of Kheora the main

seam, which is being worked in the Mayo mines, has an aggregate thickness of 550 feet, of which five seams, with a total thickness of 275 feet, consist of salt pure enough to be placed on the table with no more preparation than mere pulverising. The associated beds are impregnated with earth, and in places there occur thin layers of potash and magnesian salts. In this area salt quarrying was practiced for an unknown period before the time of Akbar, and was continued in a primitive fashion until it came under the control of the British Government with the occupation of the Panjab in 1849. In 1872 systematic mining operations were planned, and the general line of work has been continued ever since, with an annual output of roughly 100,000 tons.

Open quarries for salt are developed a short distance to the east-north-east of Kalabagh on the Indus, and similar open work is practiced near Kohat in the North West Frontier Province, where the quantity of salt may be regarded as practically inexhaustible. At Bahadur Khel the salt lies at the base of the Tertiary series, and can be traced for a distance of about eight miles with an exposed thickness of over 1000 feet, sometimes standing up as hills of solid salt above the general level of the plains. In this area the production is naturally limited by want of transport and the small local demand, the total output from the quarries being about 16,000 tons per annum. A small quantity of salt (generally about 4000 tons a year), is raised also from open quarries in the Mandi State, where the rock-salt beds, distinctly impure and earthy, lie near the junction between Tertiary formations and the older unfossiliferous groups.

Coal occurs at numerous places in association with the Nummulitic limestones of Lower Tertiary age, in the Panjab, in the North West Frontier Province, and in the Jammu division of Kashmir. The largest output has been obtained from the Salt Range, where mines have been opened up on behalf of the North Western Railway. The mines at Dandot in the Jhelam district have considerable fluctuations in output, which, however, for many years ranged near 50,000 tons. These mines, having been worked at a financial loss, were finally abandoned by the Railway Company in 1911, but a certain amount of work is still being continued by local contractors. At Bhaganwala, 19 miles further east, in the adjoining district of

Shahpur, coal was also worked for many years for the North Western State Railway, but the maximum output in any one year never exceeded 14,000 tons, and in 1900, owing to the poor quality of material obtained, the collieries were closed down. Recently, small outcrop workings have been developed in the same formation further west on the southern scarp of the Salt Range at Tejuwala in the Shahpur district.

Gold to a small amount is washed from the gravel of the Indus and some other rivers by native workers, and large concessions have been granted for systematic dredging, but these enterprises have not yet reached the commercially paying stage.

Other Metals—Prospecting has been carried on at irregular intervals in Kulu and along the corresponding belt of schistose rocks further west in Kashmir and Chitral. The copper ores occur as sulphides along certain bands in the chloritic and micaceous schists, similar in composition and probably in age to those worked further east in Kumaon, in Nipal, and in Sikkim. In Lahul near the Shigri glacier there is a lode containing antimony sulphide with ores of zinc and lead, which would almost certainly be opened up and developed but for the difficulty of access and cost of transport to the only valuable markets.

Petroleum—springs occur among the Tertiary formations of the Panjab and Biluchistan, and a few thousand gallons of oil are raised annually. Prospecting operations have been carried on vigorously during the past two or three years, but no large supplies have so far been proved. The principal oil-supplies of Burma and Assam have been obtained from rocks of Miocene age, like those of Persia and the Caspian region, but the most promising “shows” in North West India have been in the older Nummulitic formations, and the oil is thus regarded by some experts as the residue of the material which has migrated from the Miocene beds that probably at one time covered the Nummulitic formations, but have since been removed by the erosive action of the atmosphere.

Alum—is manufactured from the pyritous shales of the Mianwali district, the annual output being generally about 200 to 300 tons. Similar shales containing pyrites are known to occur in other parts of this area, and possibly the industry might be considerably extended, as the annual

requirements of India, judged by the import returns, exceed ten times the native production of alum.

Borax — is produced in Ladakh and larger quantities are imported across the frontier from Tibet. In the early summer one frequently meets herds of sheep being driven southwards across the Himalayan passes, each sheep carrying a couple of small saddle-bags laden with borax or salt, which is bartered in the Panjab bazaars for Indian and foreign stores for the winter requirements of the snow-blocked valleys beyond the frontier.

Sapphires — The sapphires of Zanskar have been worked at intervals since the discovery of the deposit in 1881, and some of the finest stones in the gem market have been obtained from this locality, where work is, however, difficult on account of the great altitude and the difficulty of access from the plains.

Limestone — Large deposits of Nummulitic limestone are found in the older Tertiary formations of North-West India. It yields a pure lime and is used in large quantities for building purposes. The constant association of these limestones with shale beds, and their frequent association with coal, naturally suggest their employment for the manufacture of cement; and special concessions have recently been given by the Panjab government with a view of encouraging the development of the industry. The nodular impure limestone, known generally by the name of *kankar*, contains sufficient clay to give it hydraulic characters when burnt, and much cement is thus manufactured. The varying composition of *kankar* naturally results in a product of irregular character, and consequently cement so made can replace Portland cement only for certain purposes.

Slate — is quarried in various places for purely local use. In the Kangra valley material of very high quality is obtained and consequently secures a wide distribution, limited, however, by competition with cheaply made tiles.

Gypsum — occurs in large quantities in association with the rock-salt of the Salt Range, but the local demand is small. There are also beds of potash and magnesian salts in the same area, but their value and quantity have not been thoroughly proved.

CHAPTER V

CLIMATE

Types of Climate —The climate of the Panjab plains is determined by their distance from the sea and the existence of formidable mountain barriers to the north and west. The factor of elevation makes the climate of the Himalayan tracts very different from that of the plains. Still more striking is the contrast between the Indian Himalayan climate and the Central Asian Trans-Himalayan climate of Spiti, Lahul, and Ladakh.

Zones. —A broad division into six zones may be recognized:

A 1.	Trans-Himalayan.		
B 2.	Himalayan.		
C.	Plains	3.	North Western.
		4.	Submontane.
		5.	Central and South Eastern.
		6.	South Western.

Trans-Himalayan Climate —Spiti, Lahul, and Ladakh are outside the meteorological influences which affect the rest of the Indian Empire. The lofty ranges of the Himalaya interpose an almost insurmountable barrier between them and the clouds of the monsoon. The rainfall is extraordinarily small, and considering the elevation of the inhabited parts, 10,000 to 14,000 feet, the snowfall there is not heavy. The air is intensely dry and clear, and the daily and seasonal range of temperature is extreme. Leh, the capital of Ladakh (11,500 feet), has an average rainfall (including snow) of about 3 inches. The mean temperature is 43° Fahr., varying from 19° in January to 64° in July. But these figures give no idea of the rigours of the severe but healthy climate. The daily range is from 25 to 30

degrees, or double what we are accustomed to in England. Once 17° below zero was recorded. In the rare dry clear atmosphere the power of the solar rays is extraordinary. "Rocks exposed to the sun may be too hot to lay the hand upon at the same time that it is freezing in the shade."



Fig. 16. Average Barometric and Wind Chart for January

The Indian Zones-Meteorological factors. —The distribution of pressure in India, determined mainly by changes of temperature, and itself determining the direction of the winds and the character of the weather, is shown graphically in figures 16 and 17. The winter or north-east monsoon does not penetrate into the Panjab, where light westernly and northerly winds prevail during the cold season. What rain is received is due to land storms originating beyond the western frontier. The branch of the summer or south-west monsoon which chiefly affects the Panjab is that which blows up the Bay of Bengal. The rain-clouds striking the Eastern Himalaya are deflected to the west and forced up the Gangetic

plain by south-westernly winds. The lower ranges of the Panjab Himalaya receive in this way very heavy downpours. The rain extends into the plains, but exhausts itself and dies away pretty rapidly to the south and west. The Bombay branch of the monsoon mostly spends itself on the Ghats and in the Deccan. But a part of it penetrates from time to time to the south-east Panjab, and if it is sucked into the Bay current, the result is widespread rain.

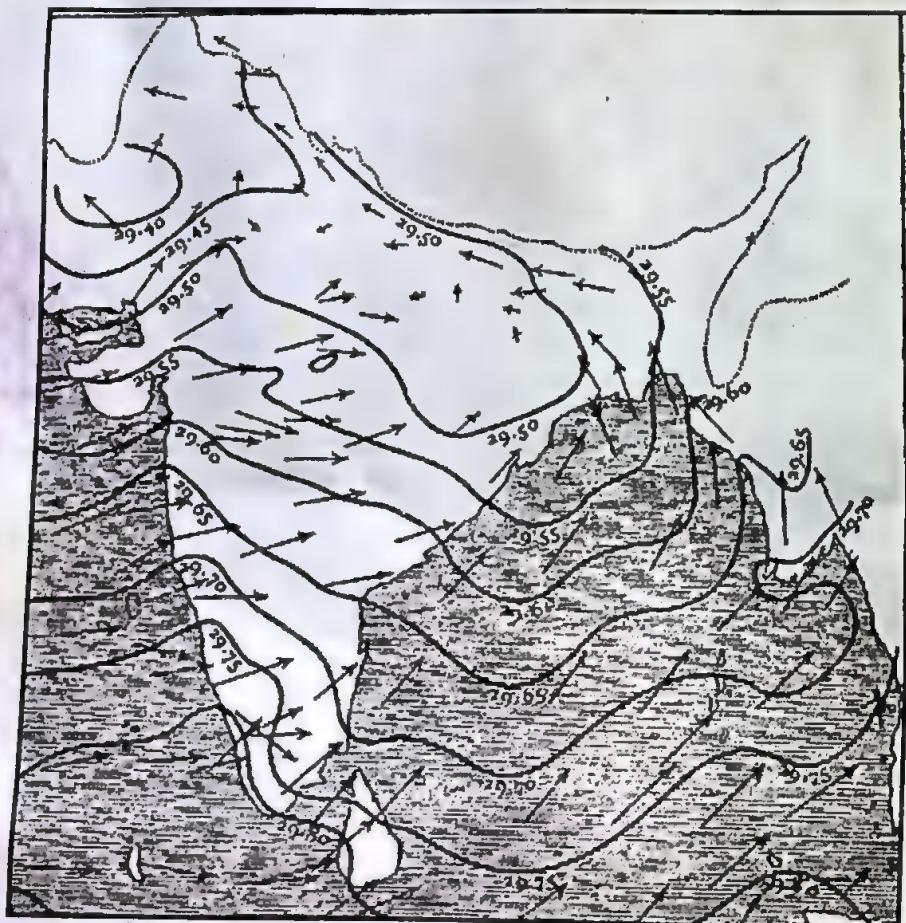


Fig. 17. Average Barometric and Wind Chart for July

Himalayan Zone. —The impressions which English people get of the climate of the Himalaya, or in Indian phrase "the Hills," are derived mainly from stations like Simla and Murree perched at a height of from 6500 to 7500 feet on the outer ranges. The data of meteorologists are mainly taken from the same localities. Places between 8000 and 10,000 feet in height and further from the plains enjoy a finer climate, being both cooler and drier in summer. But they are less accessible, and weakly per-

sons would find the greater rarity of the air trying.

In the first fortnight of April the plains become disagreeably warm, and it is well to take European children to the Hills. The Panjab Government moves to Simla in the first fortnight of May. By that time Simla is pretty warm in the middle of the day, but the nights are pleasant. The mean temperature of the 24 hours in May and June is 65° or 66° , the mean maximum and minimum being 78° and 59° . Thunderstorms with or without hail are not uncommon in April, May, and June. In a normal year the monsoon clouds drift up in the end of June, and the next three months are "the Rains." Usually it does not rain either all day or every day, but sometimes for weeks together Simla is smothered in a blanket of grey mist. Normally the rain comes in bursts with longer or shorter breaks between. About the third week of September the rains often cease quite suddenly, the end being usually proclaimed by a thunderstorm. Next morning one wakes to a new heaven and a new earth, a perfectly cloudless sky, and clean, crisp, cool air. This ideal weather lasts for the next three months. Even in December the days are made pleasant by bright sunshine, and the range of temperature is much less than in the plains. In the end of December or beginning of January the night thermometer often falls lower at Ambala and Rawalpindi than at Simla and Murree. After Christmas the weather becomes broken, and in January and February falls of snow occur. It is a disagreeable time, and English residents are glad to descend to the plains. In March also the weather is often unsettled. The really heavy falls of snow occur at levels much higher than Simla. These remarks apply *mutatis mutandis* to Dharmshala, Dalhousie, and Murree. Owing to its position right under a lofty mountain wall Dharmshala is a far wetter place than Simla. Murree gets its monsoon later, and the summer rainfall is a good deal lighter. In winter it has more snow, being nearer the source of origin of the storms. Himalayan valleys at an elevation of 5000 feet, such as the Vale of Kashmir, have a pleasant climate. The mean temperature of Srinagar (5255 feet) varies from 33° in January to 75° in July, when it is unpleasantly hot, and Europeans often move to Gulmarg. Kashmir has a heavy snowfall even in the Jhelam valley.

Below 4000 feet, especially in confined river valleys the Himalayan climate is often disagreeably hot and stuffy.

Climate of the Plains. —The course of the seasons is the same in the plains. The jaded resident finds relief when the rains cease in the end of September. The days are still warm, but the skies are clear, the air dry, and the nights cool. November is rainless and in every way a pleasant month. The clouds begin to gather before Christmas, but rain often holds off till January. Pleasant though the early months of the cold weather are, they lay traps for the unwary. In October and November the daily range of temperature is very large, exceeding 30°, and the fall at sunset very sudden. Care is needed to avoid a chill and the fever that follows. Clear and dry though the air is, the blue of the skies is pale owing to a light dust haze in the upper atmosphere. For the same reason the Himalayan snows except after rain are veiled from dwellers in the plains at a distance of 30 miles from the foot-hills. The air in these months before the winter rains is wonderfully still. In the three months after Christmas the Panjab is the pathway of a series of small storms from the west, preceded by close weather and occurring usually at intervals of a few weeks. After a day or two of wet weather the sky clears, and the storm is followed by a great drop in the temperature. The traveler who shivers after a January rain-storm finds it hard to believe that the Panjab plain is a part of the hottest region of the Old World which stretches from the Sahara to Delhi. If he had to spend the period from May to July there he would have small doubts on the subject. The heat begins to be unpleasant in April, when hot westernly winds prevail. An occasional thunderstorm with hail relieves the strain for a little. The warmest period of the year is May and June. But the intense dry heat is healthier and to many less trying than the mugginess of the rainy season. The dust-storms which used to be common have become rarer and lighter with the spread of canal irrigation in the western Panjab. The rains ought to break at Delhi in the end of June and at Lahore ten days or a fortnight later. There is often a long break when the climate is particularly trying. The nights are terribly hot. The outer air is then less stifling than that of the house, and there is the chance of a little comparative coolness shortly before dawn. Many there-

fore prefer to sleep on the roof or in the verandah. September, when the rains slacken, is a muggy, unpleasant, and unhealthy month. But in the latter half of it cooler nights give promise of a better time.

Special features of Plain Zones. —The submontane zone has the most equable and the pleasantest climate in the plains. It has a rainfall of from 30 to 40 inches, five-sevenths or more of which belongs to the monsoon period (June-September). The north-western area has a longer and colder winter and spring. In the end of December and in January the keen dry cold is distinctly trying. The figures in Statement I, for Rawalpindi and Peshawar, are not very characteristic of the zone as a whole. The average of the rainfall figures, 13 inches for Peshawar and 32 for Rawalpindi, would give a truer result. The monsoon rains come later and are much less abundant than in the submontane zone. Their influence is very feeble in the western and south-western part of the area. On the other hand the winter rains are heavier than in any other part of the province. Delhi and Lahore represent the extreme conditions of the central and south-eastern plains. The latter is really on the edge of the dry south-western area. The eastern districts of the zone have a shorter and less severe cold weather than the western, an earlier and heavier monsoon, but scantier winter rains. The total rainfall varies from 16 to 30 inches. The south-western zone, with a rainfall of from 5 to 15 inches, is the driest part of India proper except northern Sindh and western Rajputana. Neither monsoon current affects it much. At Multan there are only about fifteen days in the whole year on which any rain falls.

CHAPTER VI

HERBS, SHRUBS, AND TREES

Affinities of Panjab Flora. —It is hopeless to describe except in the broadest outline the flora of a tract covering an area of 250,000 square miles and ranging in altitude from a few hundred feet to a height 10,000 feet above the limit of flowering plants. The nature of the vegetation of any tract depends on rainfall and temperature, and only secondarily on soil. A desert is a tract with a dry substratum and dry air, great heat during some part of the year, and bright sunshine. The soil may be loam or sand, and as regards vegetation a sandy desert is the worst owing to the rapid drying up of the subsoil after rain. In the third of the maps appended to Schimper's *Plant Geography* by far the greater part of the area dealt with in this book is shown as part of the vast desert extending from the Sahara to Manchuria. Seeing that the monsoon penetrates into the province and that it is traversed by large snow-fed rivers the Panjab, except in parts of the extreme western and south-western districts, is not a desert like the Sahara or Gobi, and Schimper recognized this by marking most of the area as semi-desert. Still the flora outside the Hills and the submontane tract is predominantly of the desert type, being xerophilous or drought-resisting. The adaptations which enable plants to survive in a tract deficient in moisture are of various kinds. The roots may be greatly developed to enable them to tap the subsoil moisture, the leaves may be reduced in size, converted into thorns, or entirely dispensed with, in order to check rapid evaporation, they may be covered with silky or felted hairs, a modification which produces the same result, or their internal tissue may be succulent or mucilaginous. In the plants of the Panjab plains there is no difficulty in recognizing these features of a drought-resisting

flora. Schimper's map shows in the north-east of the area a wedge thrust in between the plains' desert and the dry elevated alpine desert cut off from the influence of the monsoon by the lofty barrier of the Inner Himalaya. This consists of two parts, monsoon frets, corresponding roughly with the Himalayan area Cis Ravi above the 5000 feet contour, and dry woodland of a semi-tropical stamp, consisting of the adjoining foot-hills and submontane tract. This wedge is in fact treated as part of the zone, which in the map (after Drude) prefixed to Willis' *Manual and Dictionary of the Flowering Plants and Ferns*, is called Indo-Malayan, and which embraces the Malayan Archipelago and part of North Australia, Burma, and practically the whole of India except the Panjab, Sindh, and Rajputana. In Drude's map the three countries last mentioned are included in a large zone called "the Mediterranean and Orient." This is a very broad classification, and in tracing the relationships of the Panjab flora it is better to treat the desert area of North Africa, which in Tripoli and Egypt extends to the coast, apart from the Mediterranean zone. It is a familiar fact that, as we ascend lofty mountains like those of the Himalaya, we pass through belts or regions of vegetation of different types. The air steadily becomes rarer and therefore colder, especially at night, and at the higher levels there is a marked reduction in the rainfall. When the alpine region, which in the Himalaya may be taken as beginning at 11,000 feet, is reached, the plants have as a rule bigger roots, shorter stems, smaller leaves, but often larger and more brilliantly coloured flowers. These are adaptations of a drought-resisting kind.

Regions. —In this sketch it will suffice to divide the tract into six regions:

Plains	1.	Panjab dry plain.
	2.	Salt Range and North West Plateau, from the frontier to Pabbi Hills.
	3.	Submontane Hills on east bank of Jhelam.
Hills	4.	Sub-Himalaya, 2000-5000 feet.
	5.	Temperature Himalaya, 11,000-16,000 feet.
	6.	Alpine Himalaya, 11,000-16000 feet

Of course a flora does not fit itself into compartments, and the changes of type are gradual.

Panjab Dry Plain. —The affinities of the flora of the Panjab plains south of the Salt Range and the submontane tract are, especially in the west, with the desert areas of Persia, Arabia, and North Africa, though the spread of canal irrigation is modifying somewhat the character of the vegetation. The soil and climate are unsuited to the growth of large trees, but adapted to scrub jungle of a drought-resisting type, which at one time covered very large areas from the Jamna to the Jhelam. The soil on which this spare scrub grew is a good strong loam, but the rainfall was too scanty and the water-level too deep to admit of much cultivation outside the valleys of the rivers till the labours of canal engineers carried their waters to the uplands. East of the Sutlej the Bikaner desert thrusts northwards a great wedge of sandy land which occupies a large area in Bahawalpur, Hissar, Ferozepur, and Patiala. Soil of this description is free of forest growth, and the monsoon rainfall in this part of the province is sufficient to encourage an easy, but very precarious, cultivation of autumn millets and pulses. The great Thal desert to the south of the Salt Range between the valleys of the Jhelam and the Indus has a similar soil, but the scantiness of the rainfall has confined cultivation within much narrower limits. Between the Sutlej and the Jhelam the uplands between the river valleys are known locally as Bars. The largest of the truly indigenous trees of the Panjab plains are the *farash* (*Tamarix articulata*) and the thorny *kikar* (*Acacia Arabica*). The latter yields excellent wood for agricultural implements, and fortunately it grows well in sour soils. Smaller thorny acacias are the *nimbar* or *raunj* (*Acacia leucophloea*) and the *khair* (*Acacia Senegal*). The dwarf tamarisk, *pilchi* or *jhao* (*Tamarix dioica*), grows freely in moist sandy soils near rivers. The scrub jungle consists mostly of *jand* (*Prosopis spicigera*), a near relation of the Acacias, *jal* or *van* (*Salvadora oleoides*), and the coral-flowered *karil* or leafless caper (*Capparis aphylla*). All these show their desert affinities, the *jand* by its long root and its thorns, the *jal* by its small leathery leaves, and the *karil* by the fact that it has managed to dispense with leaves altogether. The *jand* is a useful little tree, and wherever it grows the natural qualities of the soil are good. The sweetish fruit of the *jal*, known as *pilu*, is liked by the people, and in famines they will even eat the berries of the leafless caper. Other characteristic plants of the Panjab plains are under Leguminosae, the *khip*

(*Crotalaria burhia*), two *Farsetias* (*farid ki buti*), and the *jawasa* or camel thorn (*Alhagi camelorum*), practically leafless, but with very long and stout spines; under *Capparidaceae* several *Cleomes*, species of *Corchorus* (*Tiliaceae*), under *Zygophyllaceae* three Mediterranean genera, *Tribulus*, *Zygophyllum*, and *Fagonia*, under *Solanaceae* several *Solanums* and *Withanias*, and various salsolaceous *Chenopods* known as *lana*.



Fig. 18. Banian or Bor trees

In the sandier tracts the *ak* (*Calotropis procera*, N.O. *Asclepiadaceae*), the *harmal* (*Peganum harmala*, N.O. *Rutaceae*), and the *colocynth* gourd (*Citrullus colocynthis*, N.O. *Cucurbitaceae*), which, owing to the size of its roots, manages to flourish in the sands of African and Indian deserts, grow abundantly. Common weeds of cultivation are *Fumaria parviflora*, a near relation of the English fumitory, *Silene conoidea*, and two *Spergulas* (*Caryophyllaceae*), and *Sisymbrium Irio* (*Cruciferae*). A curious little *Orchid*, *Zeuxine sulcata*, is found growing among the grass on canal banks. The American yellow poppy, *Argemone Maxicana*, a noxious weed, has unfortunately established itself widely in the Panjab plain. Two trees of the order *Leguminosae*, the *shisham* or *tali* (*Dalbergia Sissoo*) and the *Siris* (*Albizzia lebbek*), are commonly planted on Panjab roads. The true home to the former is in river beds in the low hills or in ravines below the hills. But it is a favourite tree on roads and near wells throughout the province,

and deservedly so, for it yields excellent timber. The *siris* on the other hand is an untidy useless tree. The *kikar* might be planted as a roadside tree to a greater extent. Several species of figs, especially the *patal* (*Ficus religiosa*) and *bor* or banian (*Ficus Indica*) are popular trees.

Salt Range and North-West Plains. —Our second region may be taken as extending from the Pabbi hills on the east of the Jhelam in gujrat to our administrative boundary beyond the Indus, its southern limit being the Salt Range. Here the flora is of a distinctly Mediterranean type. Poppies are as familiar in Rawalpindi as they are in England or Italy, and *Hypecoum procumbens*, a curious Italian plant of the same order, is found in Attock. The abundance of Crucifers is also a Mediterranean feature. *Eruca sativa*, the oil-seed known as *taramira* or *jamian*, which sows itself freely in waste land and may be found growing even on railway tracks in the Rawalpindi division, is an Italian and Spanish weed. *Malcolmia strigosa*, which spreads a reddish carpet over the ground and *Malcolmia Africana* are common Crucifers near Rawalpindi. The latter is a Mediterranean species. The Salt Range genera *Diplotaxis* and *Moricandia* are Italian, and the peculiar *Notoceras Canariensis* found in Attock is also a native of the Canary Island. Another order, *Boraginaceae*, which is very prominent in the Mediterranean region, is also important in the North-West Panjab, though the showier plants of the order are wanting. One curious Borage, *Arnebia Griffithii*, seems to be purely Asiatic. It has five brown spots on its petals, which fade and disappear in the noonday sunshine. These are supposed to be drops of sweat which fell from Muhammad's forehead, hence the plant is called *paighambari phul* or the prophet's flower. Among Composites *Calendulas* and *Carthamus oxyacantha* or the *pohli*, a near relation of the *Carthamus* which yields the saffron dye, are abundant. Both are common Mediterranean genera. *Silybum Marianum*, a handsome thistle with large leaves mottled with white, extends from Britain to Rawalpindi. Interesting species are *Tulipa stellata* and *Tulipa chrysanthia*. The latter is a Salt Range plant, as is the crocus-like *Merendera Persica*, and the yellow *Iris Aitchisoni*. A curious plant found in the same hills is the cactus-like *Boucerosia* (N.O. *Asclepiadaceae*), recalling to botanists the more familiar *Stapelias* of the same order. Another leafless *Asclepiad*,

Periploca aphylla, which extends westwards to Arabia and Nubia and southwards to Sindh, is, like *Boucerosia*, a typical xerophytes adapted to a very dry soil and atmosphere. The thorny *Acacias*, *A. eburnean* and *A. modesta* (vern. *Phulahi*), of the low bare hills of the N.W. Panjab are also drought-resisting plants.

Submontane Region. —The Submontane region consists of a broad belt below the Siwaliks extending from the Jamna nearly to the Jhelam, and may be said to include the districts of Ambala, Karnal (part, Hoshiarpur, Kangra (part), Hazara (part), Jalandhar, Gurdaspur, Sialkot, Gujrat (part). In its flora there is a strong infusion of Indo-Malayan elements. An interesting member of it is the *Butea frondosa*, a small tree of the order Leguminosae. It is known by several names, *dhak*, *chichra*, *palah*, and *palas*. Putting out its large orange-red flowers in April it ushers in the hot weather. It has a wide range from Ceylon to Bengal, where it has given its name to the town of Dacca and the battlefield of Plassy (Palasi). From Bengal it extends all the way to Hazara. There can be no doubt that a large part of the submontane region was once *dhak* forest. Tracts in the north of Karnal —Chachra, in Jalandhar —Dardhak, and in Gujrat —Palahi, have taken their names from this tree. It coppices very freely, furnishes excellent firewood and good timber for the wooden frames on which the masonry cylinders of wells are reared, it exudes a valuable gum, its flowers yield a dye, and the dry leaves are eaten by buffaloes. A tree commonly planted near wells and villages in the submontane tract is the *dhrek* (*Melia azedarach*, N.O. *Meliaceae*), which is found as far west as Persia and is often called by English people the Persian lilac. The *bahera* (*Terminalia belerica*, N.O. *Combretaceae*), a much larger tree, is Indo-Malayan. Common shrubs are the *marwan* (*Vitex negundo*, N.O. *Verbenaceae*), *Plumbago Zeylanica* (*Plumbaginaceae*), the *bansa* or *bhekar* (*Adhatoda vasica*, N.O. *Acanthaceae*). The last is Indo-Malayan. Among herbs *Cassias*, which do not occur in Europe, are common. The curious cactus-like *Euphorbia Royleana* grows abundantly and is used for making hedges.

Sub-Himalaya. —A large part of the Sub-Himalayan region belongs to the Siwaliks. The climate is fairly moist and subject to less extremes of heat and cold than the regions described above. A strong infusion of

Indo-Malayan types is found and a noticeable feature is the large number of flowering trees and shrubs. Such beautiful flowering trees as the *simal* or silk-cotton tree (*Bombax Malabaricum*, N.O. Malvaceae), the *amaltas* (*Cassia fistula*), *Albizzia mollis* and *Albizzia stipulate*, *Erythrina suberosa*, *Bauhinia purpurea* and *Bauhinia variegata*, all belonging to the order Leguminosae, are unknown in Europe, but common in the Indo-Malayan region. This is true also of *Oroxylum Indicum* (N.O. Bignoniaceae) with its remarkable long sword-like capsules, and of the *kamila* (*Mallotus Philippinensis*), which abounds in the low hills, but may escape the traveller's notice as its flowers have no charm of form or colour. He will in spring hardly fail to observe another Indo-Malayan tree, the *dhawi* (*Woodfordia floribunda*, N.O. Lythraceae) with its bright red flowers. Shrubs with conspicuous flowers are also common, among which may be noted species of *Clematis*, *Capparis spinosa*, *Kydia calycin*, *Mimosa rubicaulis*, *Hamiltonia suaveolens*, *Caryopteris Wallichiana*, and *Nerium Oleander*. The latter grows freely in sandy torrent beds. *Rhus continuus*, which reddens the hillsides in May, is a native also of Syria, Italy, and Southern France. Other trees to be noticed are a wild pear (*Pyrus pashia*), the olive (*Olea cuspidate*), the *khair* (*Acacia catechu*) useful to tanners, the *tun* (*Cedrela toona*), whose wood is often used for furniture, the *dhaman* (*Grewia oppositifolia*, N.O. Tiliaceae), and several species of fig. the most valuable products however of the forests of the lower hills are the *chir* or *chil* pine (*Pinus longifolia*), and a giant grass, the bamboo (*Dendrocalamus strictus*), which attains a height of from 20 to 40 feet. Shrubs which grow freely on stony hills are the *sanattha* or *mendru* (*Dodonaea viscosa*, N.O. Sapindaceae), which is a valuable protection against denudation, as goats pass it by, the *garna*, which is a species of *Carissa*, and *Plectranthus rugosus*. Climbers are common. The great *Hiptag madablota* (N.O. Malpighiaceae), the *Buhinia Vahlii* or elephant creeper, and some species of the parasitic *Loranthus*, deserve mention, also *Acacia caesia*, *Pueraria tuberosa*, *Vallaris Heynei*, *Porana paniculata*, and several vines, especially *Vitis lanata* with its large rusty leaves. Characteristic herbs are the sweet-scented *Viola patrinii*, the slender milkwort, *Polygala Abyssinica*, a handsome pea, *Vigna vexillata*, a borage, *Trichodesma Indicum*, a balsam, *Impatiens balsamina*, familiar in English gardens, the beautiful delicate little blue *Evolvulus*

alsinoides, the showy purple convolvulus, *Ipomaea hederacea*, and a curious lily, *Gloriosa superb*.



Fig. 19. Deodars and Hill Temple

Temperate Himalaya. —The richest part of the temperate Himalayan flora is probably in the 7500-10,000 zone. Above 10,000 feet sub-alpine conditions begin, and at 12,000 feet tree growth becomes very scanty and the flora is distinctly alpine. The *chir* pine so common in sub-Himalayan forests extends up to 6500 feet, at this height and 1000 feet lower the *ban* oak (*Quercus incana*), grey on the lower side of the leaf, which is so common at Simla, abounds. Where the *chil* stops, the *kail* or blue pine (*Pinus excels*), after *deodar* the most valuable product of Himalayan forests, begins. Its zone may be taken as from 7000 to 9000 feet. To the same zone belong the *kelu* or *deodar* (*Cedrus Libani*), the glossy leaved *mohru* oak (*Quercus dilatata*), whose wood is used for making charcoal, and two small trees of the Heath order, *Rhododendron arborea* and *Pieris ovalifolia*. The former in April and May lightens up with its bright red flowers the somber Simla forests. The *kharshu* or rusty-leaved oak (*Quercus semecarpifolia*) affects a colder climate than its more beautiful glossy-leaved relation, and may almost be considered sub-alpine. It is common on Hattu, and the oaks there present a forlorn appearance after rain with funereal mosses dripping with moisture hanging from their trunks. The firs, *Picea morinda*, with its grey tassels, and *Abies Pindrow* with its dark green yew-like foliage, succeed the blue pine. *Picea* may be said to range from 8000 to 10,000 feet, and the upper limit of *Abies* is from 1000 to

2000 feet higher.



Fig. 21. Chinars

These splendid trees are unfortunately of small commercial value. The yew, *Taxus baccata*, is found associated with them. Between 5000 and 8000 feet, besides the oaks and other broad-leaved trees already noticed, two relations of the dogwood, *Cornus capitata* and *Cornus macrophylla*, a large poplar, *Populus ciliata*, a pear, *Pyrus lanata*, a holly, *Ilex dipyrena*, an elm and its near relation, *Celtis australis*, and species of *Rhus* and *Euonymus*, may be mentioned. *Cornus capitata* is a small tree, but it attracts notice because the heads of flowers surrounded by bracts of a pale yellow colour have a curious likeness to a rose, and the fruit is in semblance not unlike a strawberry. Above 8000 feet several species of maple abound. The *chinar* or *Platanus orientalis*, found as far west as Sicily, grows to splendid proportions by the quiet waterways of the Vale of Kashmir. The undergrowth in temperate Himalayan forests consists largely of barberries, *Desmodiums*, *Indigoferas*, roses, brambles, *Spiraeas*, *Viburnums*, honeysuckles with their near relation, *Leycesteria formosa*, which have been introduced into English shrubberies. The great vine, *Vitis Himalayana*, whose leaves turn red in autumn, climbs up many of the trees. Of the flowers it is impossible to give any adequate account. The flora is distinctly Mediterranean in type; the orders in Collett's *Flora Simlensis* which

are not represented in the Italian flora contain hardly more than 5 per cent of the total genera. The plants included in some of these non-Mediterranean orders are very beautiful, for example, the Begonias, the Amphicomes (Bignoniaceae) *Chitita bifolia* and *Platystemma violoides* (Gesneraceae), and *Hedychium* (Scitamineae). More important members of the flora are species of *Clematis Montana*, anemones, larkspurs, columbine, monkshoods, St John's worts, geraniums, balsams, species of *Astragalus*, *Potentillas*, *Asters*, ragworts, species of *Cynoglossum*, gentians and *Swertia*s, *Androsace*s and primroses, *Wulfenia* and louseworts, species of *Strobilanthes*, *Salvias* and *Nepetas*, orchids, irises, *Ophiopogon*, *Smilax*, *Alliums*, lilies, and Solomon's seal. Snake plants (*Arisaema*) and their relation *Sauromatum guttatum* of the order Araceae are very common in the woods. The striped spathe in some species of *Arisaema* bears a curious resemblance to the head of a cobra uplifted to strike. Orchids decrease as one proceeds westwards, but irises are much more common in Kashmir than in the Simla hills. The Kashmir fritillaries include the beautiful Crown Imperial.



Fig. 22. *Rhododendron campanulatum*

Alpine Himalaya. —In the Alpine Himalaya the scanty tree-growth

is represented by willows, junipers, and birches. After 12,000 or 12,500 feet it practically disappears. A dwarf shrub, *Juniperus recurva*, is found clothing hill-sides a good way above the two trees of the same genus. Other alpine shrubs which may be noticed are two rhododendrons, which grow on cliffs at an elevation of 10,000 to 14,000 feet, *R. campanulatum* and *R. lepidotum*, *Gaultheria nummularioides* with its black-purple berry, and *Cassiope fastigiata*, all belonging to the order Ericaceae. The herbs include beautiful primulas, saxifrages, and gentians, and in the bellflower order species of *Codonopsis* and *Cyananthus*. Among Composites may be mentioned the tansies, *Saussureas*, and the fine *Erigeron multiradiatus* common in the forest above Narkanda. In the bleak uplands beyond the Himalaya tree-growth is very scanty, but in favoured localities willows and the pencil cedar, *Juniperus pseudosabina*, are found. The people depend for fuel largely on a hoary bush of the Chenopod order, *Eurotia ceratoides*. In places a profusion of the red Tibetan roses, *Rosa Webbiana*, lightens up the otherwise dreary scene.

CHAPTER VII

FORESTS

Rights of State in Waste. —Under Indian rule the State claimed full power of disposing of the waste, and even where an exclusive right in the soil was not maintained, some valuable trees, e.g. the *deodar* in the Himalaya, were treated as the property of the Raja. Under the tenure prevailing in the hills the soil is the Raja's, but the people have a permanent tenant right in any land brought under cultivation with his permission. In Kulu the British Government asserted its ownership of the waste. In the south-western Panjab, where the scattered hamlets had no real boundaries, ample waste was allotted to each estate, and the remainder was claimed as State property.

Kinds of Forest. —The lands in the Panjab over which authority, varying through many degrees from full ownership unburdened with rights of user down to a power of control exercised in the interests of the surrounding village communities, may be roughly divided into

- (a) Mountain forests;
- (b) Hill forests;
- (c) Scrub and grass *Jangal* in the Plains.

The first are forests of *deodar*, blue pine, fir, and oak in the Himalaya above the level of 5000 feet. The hill forests occupy the lower spurs, the Siwaliks in Hoshiarpur, etc., and the low dry hills of the north-west. A strong growth of *chir* pine (*Pinus longifolia*) is often found in the Himalaya between 3000 and 5000 feet. Below 3000 feet is scrub forest, the only really valuable product being bamboo. The hills in the north-western districts of the Panjab and N.W.F. Province, when nature is allowed to have

its way, are covered with low scrub including in some parts a dwarf palm (*Nannorrhops Ritchieana*), useful for mat making, and with a taller, but scantier growth of *phulabi* (*Acacia modesta*) and wild olive. What remains of the scrub and grass *jangal* of the plains is to be found chiefly in the Bar tracts between the Sutlej and the Jhelam. Much of it has disappeared, or is about to disappear, with the advance of canal irrigation. Dry though the climate is the Bar was in good seasons a famous grazing area. The scrub consisted mainly of *jand* (*Prosopis spicigera*), *jal* (*Salvadora oleoides*), the *karil* (*Capparis aphylla*) and the *farash* (*Tamarix articulata*).

Management and Income of Forests. —The Forest Department of the Panjab has existed since 1864, when the first Conservator was appointed. In 1911-12 it managed 8359 square miles in the Panjab consisting of:

Reserved Forests 1844 square miles

Protected „ 5203. „ „

Unclassed „ 1312 „ „

It was also in charge of 235 square miles of reserved forest in the Hazara district of the N.W.F. Province, and of 364 miles of fine mountain forest in the native State of Bashahr. In addition a few reserved forests have been made over as grazing areas to the Military Department, and Deputy Commissioners are in charge of a very large area of unclassed forest.

No forest can be declared "reserved" or "protected" unless it is owned in whole or in part by the State. It is enough if the trees or some of them are the property of the Government. In order to safeguard all private rights a special forest settlement must be made before a forest can be declared to be "reserved." In the case of a protected forest it is enough if Government is satisfied that the rights of the State and of private persons have been recorded at a land revenue settlement. After deducting income belonging to the year 1909-10 realized in 1910-11 the average income of the two years ending 1911-12 was £81,805 (Rs. 1,227,082) and the average expenditure £50,954 (Rs. 764,309).

Sources of Income. —In the mountain forests the chief source of income is the *deodar*, which is valuable both for railway sleepers and as

building timber. The blue pine is also of commercial value. *Deodar*, blue pine, and some *chir* and floated down the rivers to depots in the plains. Firwood is inferior to cedar and pine, and the great fir forests are too remote for profitable working at present. There are fine mountain forests in Chitral, on the Safed Koh, and in Western Waziristan, but these have so far not even been fully explored. The value of the hill forests may be increased by the success which has attended the experimental extraction of turpentine from the resin of the *chir* pine. The bamboo forests of Kangra are profitable. At present an attempt is being made to acclimatize several species of *Eucalyptus* in the low hills. The scrub *jangal* in the plains yields good fuel. As the area is constantly shrinking it is fortunate that the railways have ceased to depend on this source of supply, coal having to a great extent taken the place of wood. To prevent shortage of fuel considerable areas in the tracts commanded by the new canals are being reserved for irrigated forests. A forest of this class covering an area of 37 square miles and irrigated from the Upper Bari Doab Canal has long existed at Changa Manga in the Lahore district.

Forests in Kashmir.—The extensive and valuable Kashmir forests are mountain and hill forests, the former, which cover much the larger area yielding, *deodar*, blue pine, and firs, and the latter *chir* pine. The total area exceeds 2600 square miles.

CHAPTER VIII

BEASTS, BIRDS, FISHES, AND INSECTS

Fauna.—With the spread of cultivation and drainage the Panjab plains have ceased to be to anything like the old extent the haunt of wild beasts and wild fowl. The lion has long been extinct and the tiger has practically disappeared. Leopards are to be found in low hills, and sometimes stray into the plains. Wolves are seen occasionally, and jackals are very common. The black buck (*Antilope cervicapra*) can still be shot in many places. The graceful little *chinkara* or ravine deer (*Gazella Bennettii*) is found in sandy tracts, and the hogdeer or *parha* (*Cervus porcinus*) near rivers. The *nilgai* (*Boselaphus tragocamelus*) is less common. Monkeys abound in the hills and in canal-irrigated tracts in the Eastern districts, where their sacred character protects them from destruction, though they do much damage to crops. Peafowl are to be seen in certain tracts, especially in the eastern Panjab. They should not be shot where the people are Hindus or anywhere near a Hindushrine. The great and lesser bustards and several kinds of sand grouse are to be found in sandy districts. The grey partridge is everywhere, and the black can be got near the rivers. The *sisi* and the *chikor* are the partridges of the hills, which are also the home of fine varieties of pheasants including the *monal*. Quail frequent the ripening fields in April and late in September. Duck of various kinds abound where there are *jhils*, and snipe are to be got in marshy ground. The green parrots, crows, and vultures are familiar sights. Both the sharp-nosed (*Garialis Gangetica*, vern. *gharial*) and the blunt-nosed (*Crocodilus palustris*, vern. *magar*) crocodiles haunt the rivers. The fish are tasteless; the *rohu* and

mahseer are the best Poisonous snakes are the *karail*, the *cobra*, and Russell's viper. The first is sometimes an intruder into houses. Lizards and mongooses are less unwelcome visitors. White ants attack timber and ruin books, and mosquitoes and sandflies add to the unpleasant features of the hot weather. The best known insect pest is the locust, but visitations on a large scale are rare. Of late years much more damage has been done by an insect which harbours in the cotton bolls.

Game of the Mountains. —If sport in the plains has ceased to be first rate, it is otherwise in the hills. Some areas and the heights at which the game is to be found are noted below:

(a) Goats and goat-antelopes:

1. Ibex (*Capra Sibirica*) 10,000-14,000 ft. Kashmir, Lahul, Bashahr.
2. Markhor (*Capra Falconeri*). Kashmir, Astor, Gilgit, Suliman hills.
3. Thar (*Hemitragus jemlaicus*), 9000-14,000 ft. Kashmir, Chamba.
4. Gural (*Cemas goral*), 3000-8000 ft. Kashmir, Chamba, Simla hills, Bashahr.
5. Serow (*Nemorhaedus bubalinus*), 6000-12,000 ft. From Kashmir eastwards.

(b) Sheep:

1. Bharal (*Ovis nahura*), 10,000-12,000 ft. and over. Ladakh, Bashahr.
2. Argali (*Ovis Ammon*). Ladakh.
3. Urial (*Ovis Vignei*) Salt Range, Suliman hills

(c) Antelopes:

1. Chiru of Tibetan Antelope (*Pantholops hodgsoni*). Ladakh.

(d) Oxen-Yak (*Bos grunniens*). Ladakh. The domesticated *yak* is invaluable as a beast of burden in the Trans-Himalayan tract the royal fly whisk or *chauri* is made from pure white *yak* tails.

(e) Stag:

1. Barasingha (*Cervus Duvanceli*). Foot of Himalaya in Kashmir.

(f) Bears:

1. Red or Brown (*Ursus Arctos*), 10,000-13,000 ft. Kashmir, Chamba, Bashahr, etc.
2. Black (*Ursus torquatus*), 6000-12,000 ft. Same regions, but at lower elevations. The small bear of the southern Suliman hills known as *mam* is now considered a variety of the black bear.



Fig. 24. Yaks

(g) Leopards:

1. Snow Leopard (*Felis Uncia*), 9000-15,000 ft. Kashmir, chamba, Bashahr.
2. Ordinary Leopard (*Felis Pardus*). Lower hills.

SHOOTING IN HILLS

Shooting in Hills. —The finest shooting in the north-west Himalaya is probably to be got in Ladakh and Baltistan, but the trip is somewhat expensive and requires more time than may be available. In many areas licenses have to be obtained, and the conditions limit the number of certain animals, and the size of heads, that may be shot. For example, the permit in Chamba may allow the shooting of two red bear and two *thar*, and when these have been got the sportsman must turn his attention to black bear and *gural*. Any one contemplating a shooting expedition in the Himalaya should get from one who has the necessary experience very complete instructions as to weapons, tents, clothing, stores, etc.

SPORT IN THE PLAINS

(a) **Black Buck Shooting.** —To get a good idea of what shooting in the plains is like Major Glasford's *Raifile and Romance in the Indian Jungle* may be consulted. As regards larger game the favourite sport is black buck shooting. A high velocity cordite rifle is dangerous to the country people, and some rifle firing black powder should be used. It is well to reach the home of the herd soon after sunrise while it is still in the open, and not among the crops. There will usually be one old buck in each herd. He himself is not watchful, but his does are, and the herd gallops off with great leaps at the first scent of danger, the does leading and their lord and master bringing up the rear. If by dint of careful and patient stalking you get to some point of vantage, say 100 yards from the big buck, it is worth while to shoot. Even if the bullet finds its mark the quarry may gallop 50 yards before it drops. Good heads vary from 20" to 24" or even more.



Fig. 25. Black buck

(b) **Small game in Plains.** —The cold weather shooting begins with the advent of the quail in the end of September and ends when they reappear among the ripening wheat in April. The duck arrive from the

Central Asian lakes in November and duck and snipe shooting lasts till February in districts where there are *jhils* and swampy land. For a decent shot 30 couple of snipe is a fair bag. To get duck the *jhil* should be visited at dawn and again in the evening, and it is well to post several guns in favourable positions in the probable line of flight. 40 or 50 birds would be a good morning's bag. In drier tracts the bag will consist of partridges and a hare or two, or, if the country is sandy, some sand-grouse and perhaps a bustard.

CHAPTER IX

THE PEOPLE: NUMBERS, RACES, AND LANGUAGES

Growth of population. —It is probable that in the 64 years since annexation the population of the Panjab has increased by from 40 to 50 per cent. The first reliable census was taken in 1881. The figures for the four decennial enumerations are:

Year	Panjab			N.W.F Province	Kashmir
	British	Native States	Total		
1881	17,274,597	3,861,683	21,136,280	1,543,726	
1891	19,009,368	4,263,280	23,272,648	1,857,504	2,543,952
1901	20,330,337	4,424,398	24,754,735	2,041,534	2,905,578
1911	19,974,956	4,212,974	24,187,730	2,196,933	3,158,126

Incidence of Population in Panjab. —The estimated numbers of independent tribes dwelling within the British sphere of influence is 1,600,000. The incidence of the population on the total area of the Panjab including native States is 177 per square mile, which may be compared with 189 in France and 287 in the British Isles. As the map shows, the density is reduced by the large area of semi-desert country in the southwest and by the mountainous tract in the north-east. The distribution of the population is the exact opposite of that which prevails in Great Britain. There are only 174 towns as compared with 44,400 villages, and nearly nine-tenths of the people are to be found in the latter. Some of the so-called towns are extremely small, and the average population per town is

but 14,800 souls. There are no large towns in the European sense. The biggest, Delhi and Lahore, returned respectively 232,837 and 228,687 persons.

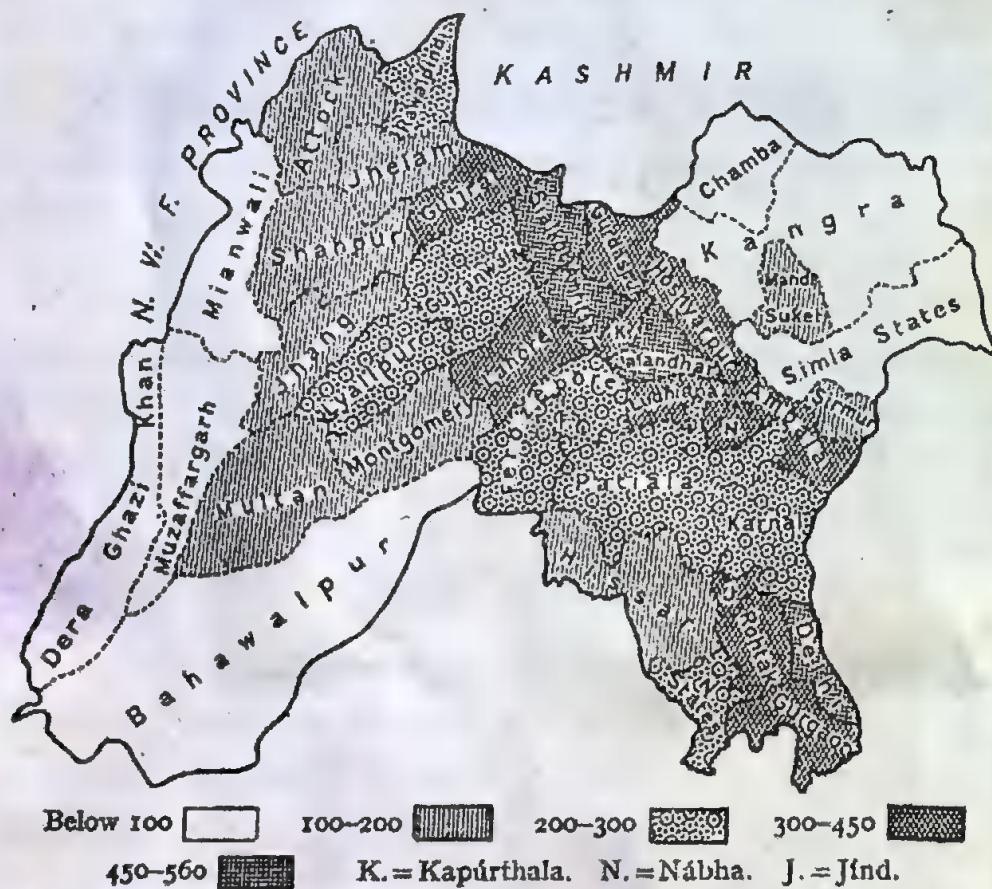


Fig. 26. Map showing density of population.

Growth stopped by Plague. —The growth of the population between 1881 and 1891 amounted to 10 p.c. Plague, which has smitten the Panjab more severely than any other province, appeared in 1896, and its effect was seen in the lower rate of expansion between 1891 and 1901. Notwithstanding great extensions of irrigation and cultivation in the Rechna Doab the numbers declined by 2 p.c. between 1901 and 1911. In the ten years from 1901 to 1910 in the British districts alone over two million people died of plague and the death-rate was raised to 12 p.c. above the normal. It actually exceeded the birth-rate by 2 p.c. Of the total deaths in the decade nearly one in four was due to plague. The part which has suffered most is the rich submontane tract east of the Chenab, Lahore

and Gujranwala, and some of the south-eastern districts. A glance at the map will show how large the loss of population has been there. It is by no means entirely due to plague. The submontane districts were almost over-populated, and many of their people have emigrated as colonists, tenants, and labourers to the waste tracts brought under cultivation by the excavation of the Lower Chenab and Jhelam canals. The districts which have received very marked additions of population from this cause are Jhang (21 p.c.), Shahpur (30 p.c.), and Lyallpur (45 p.c.). Deaths from plague have greatly increased the deficiency of females, which has always been a noteworthy feature in 1911 the proportion had very nearly fallen to four females for every five males.



Fig. 27. Map showing increase and decrease of population

Increase and Incidence in N.W.F. Province. —The incidence of the population in the area covered by the five districts of the N.W.F. Province is 164 per square mile. The district figures are given in the map

in the margin. The increase between 1901 and 1911 in these districts was $7\frac{1}{2}$ p.c. There have been no severe outbreaks of plague like those which have decimated the population of some of the Panjab districts.



Fig. 28. Map showing density of population in N.W.F. Province.

General figures for the territory of the Maharaja of Kashmir are meaningless. In the huge Indus valley the incidence is only 4 persons per sq. mile. In Jammu and Kashmir it is 138. The map taken from the Census Report gives the details. The increase in the decade was on paper $8\frac{1}{2}$ p.c., distributed between $5\frac{1}{4}$ in Jammu, 12 in Kashmir, and 14 in the Indus valley. A great part of the increase in the last must be put down to better enumeration.

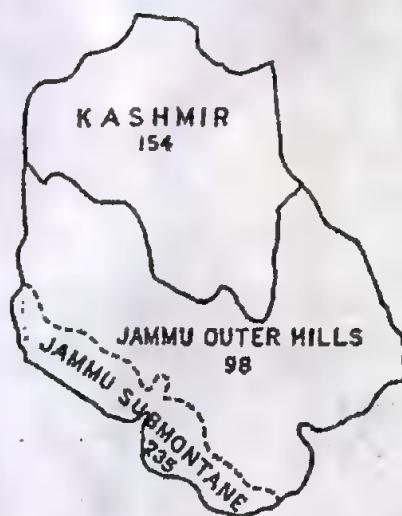


Fig. 29. Map showing density of population in Kashmir.

Health and duration of life. — The climate of the Panjab plains has produced a vigorous, but not a long-lived, race. The mean age of the whole population in the British districts is only 25. The normal birth-rate of the Panjab is about 41 per 1000, which exceeds the English rate in the proportion of 5 to 3. In 1910 the recorded birth-rate in the N.W.F. Province was 38 per 1000. Till plague appeared the Panjab death-rate averaged 32 or 33 per 1000, or more than double that of England. The infantile mortality is enormous, and one out of every four or five children fails to survive its first year. The death-rate in the N.W.F. Province was 27 per 1000 in 1910. In the ten years ending 1910 plague pushed up the average death-rate in the Panjab to 43 $\frac{1}{2}$ per 1000. Even now malarial fever is a far worse foe than plague. The average annual deaths in the ten years ending 1910 were:

Fevers	450,376
Plague	202,522
Other diseases	231,473
Total	884,371

Fever is very rife in October and November, and these are the most unhealthy months in the year, March and April being the best. The variations under fevers and plague from year to year are enormous. In 1907 the latter claimed 608,685 victims, and the provincial death rate reached the appalling figure of 61 per 1000. Next year the plague mortality dropped to 30,708, but there were 697,058 deaths from fever. There is unfortunately no reason to believe that plague has spent its force or that the people as a whole will in the near future generally accept the protective measures of inoculation and evacuation. Vaccination, the prejudice against which has largely disappeared, has robbed the small-pox goddess of many offerings. As a general cause of mortality the effect of cholera in the Panjab is now insignificant. But it is still to be feared in the Kashmir valley, especially in the picturesque but filthy summer capital. Syphilis is very common in the hill country in the north-east of the province. Blindness and leprosy are both markedly on the decrease. Both infirmities are common in Kashmir, especially the former. The rigours of the climate in a large part of the State force the people to live day and night for the seven winter months almost entirely in dark and smoky huts, and it is

small wonder that their eyesight is ruined.

Occupations. —The Panjab is preeminently an agricultural country, and the same is true in an almost greater degree of the N.W.F. Province and Kashmir. The typical holding is that of the small landowner tilling from 3 to 10 acres with his own hands with or without help from village menials. The tenant class is increasing, but there are still three owners to two tenants. Together they make up 50 p.c. of the population of the Panjab, and 5 p.c. is added for farm labourers. Altogether, according to the census returns 58 p.c. of the population depends for its support on the soil, 20.5 on industries, chiefly the handicrafts of the weaver, potter, leather worker, carpenter, and blacksmith, 9.4 on trade, 2.5 on professions, and 9.6 on other sources of livelihood.

Measures taken to protect agriculturists. —In a country owned so largely by small farmers, the first task of the Government must be to secure their welfare and contentment. Before plague laid its grasp on the rich central districts it was feared that they were becoming congested, and the canal colonization schemes referred to in a later chapter were largely designed to relieve them. But there is a much subtler foe to whose insidious attacks small owners are liable, the temptation to abuse their credit till their acres are loaded with mortgages and finally lost. So threatening had this economic disease for years appeared that at last in 1900 the Panjab Alienation of Land Act was passed, which forbade sales by people of agricultural tribes to other classes without the sanction of the district officer, and greatly restricted the power of mortgaging. The same restrictions are in force in the N.W.F. Province. The Act is popular with those for whose benefit it was devised, and has effected its object of checking land alienation and probably to some extent discouraged extravagance. It has been supplemented by a still more valuable measure, the Cooperative Credit Societies Act. The Growth of these societies in the Panjab has been very remarkable, a notable contrast to the very slow advance of the similar movement in England. In 1913-14 there were 3261 village banks with 155,250 members and a working capital of $133\frac{3}{4}$ lakhs of £885,149, besides 38 central banks with a capital of $42\frac{3}{4}$ lakhs or about £285,000. Village banks held deposits amounting to nearly 37 lakhs, more than half

of which was received from non-members, and lent out 71½ lakhs in the year to their members.

Tribal Composition. —Table I based on the Census returns shows the percentages of the total population belonging to the chief tribes. The classification into "land-holding, etc." is a rough one

Jats. —The panjab is *par excellence* the home of the Jats. Everywhere in the plains, except in the extreme north-west corner of the province, they form a large element in the population. In the east they are Hindus, in the centre Sikhs and Muhammadans, and in the west Muhammadans. The Jat is a typical son of the soil, strong and sturdy, hardworking and brave, a fine soldier and an excellent farmer, but slow-witted and grasping. The Sikh Jat finds and honourable outlet for his overflowing energy in the army and in the service of the Crown beyond the bounds of India. When he misses that he sometimes takes to dacoity. Unfortunately he is often given to strong drink, and, when his passions or his greed are aroused, can be exceedingly brutal. Jat in the Western Panjab is applied to a large number of tribes, whose ethnical affinities are somewhat dubious.

Rajputs. —Rajputs are found in considerable numbers all over the province except in a few of the western and south-western districts. As farmers they are much hampered by caste rules which forbid the employment of their women in the fields, and the prohibition of widow remarriage is a severe handicap. They are generally classed as poor cultivators, and this is usually, but by no means universally, a true description. The Dogra Rajputs of the low hills are good soldiers. They are numerous in Kangra and in the Jammu province of Kashmir.

Brahmas. —The Brahmas of the eastern plains and north-eastern hills are mostly agriculturists, and the Muhal Brahman of the north-western districts is a landowner and a soldier. In the hills the Brahman is often a shopkeeper. The priestly Brahman is found everywhere, but his spiritual authority has always been far less in the Panjab than in most parts of India.

Biluches. —When the frontier was separated off the biluch district of Dera Ghazi Khan with its strong tribal organization under chiefs or *tumandar's* was left in the Panjab. The biluches are a frank, manly, truthful

race, free from fanaticism and ready as a rule to follow their chiefs. They are fine horsemen. Unfortunately it is difficult to get them to enlist.

Pathans. —Both politically and numerically the Pathans are the predominant tribe in the N.W.F. Province, and are of importance in parts of the Panjab districts of Attock and Mianwali. The Pathan is a democrat and often a fanatic, more under the influence of *mullahs* than of the *maliks* or headmen of his tribe. He has not the frank straightforward nature of the biluch, is untiring in pursuit of revenge, and is not free from cruelty. But, when he has eaten the *Sarkar's* salt, he is a very brave and dashing soldier, and he is a faithful host to anyone whom he has admitted under his roof.

Awans. —The home of the Awan in the Panjab is the Salt Range and the parts of Attock and Mianwali, lying to the north of it, and this tract of country is known as the Awankari. In the N.W.F. Province they are, after the Pathans, by far the largest tribe, and are specially numerous in Peshawar and Hazara.

Shekhs. —Of the Shekhs about half are Kureshis, Sadikis, and Ansaris of foreign origin and high social standing. The rest are new converts to Islam, often of the sweeper caste originally.

Saiyyids. —Saiyyids are unsatisfactory landowners, and are kept going by the offerings of their followers. They are mostly Shias. It is not necessary to believe that they are all descended from the Prophet's son-in-law, Ali. A native proverb with pardonable exaggeration says: "The first year I was a weaver (Julaha), the next year a Shekh. This year, if prices rise, I shall be a Saiyyid."

Trading Castes. —Acroras are the traders of the S.W. Panjab and of the N.W.F. Province. They share the Central Panjab with the Khatri, who predominate in the north-western districts. The Khatri of the Rawalpindi division is often a landowner and a first-class fighting man. Some of our strongest Indian civil officials have been Arors. In the Delhi division the place of the Arora and Khatri is taken by the bania, and in Kangra by the Sud or the Brahman. Khojas and Parachas are Muhammadan traders.

Artisans and Menials. —Among artisans and menials Sunars (goldsmiths), Rajes (masons), Lohars (black-smiths), and Tarkhans (carpen-

ters) take the first rank.

Impure Castes. —The vast majority of the impure castes, the “untouchables” of the Hindu religion, are scavengers and workers in leather. The sweeper who embraces Islam becomes a Musalli. The Sikh Mazhbis, who are the descendants of sweeper converts, have done excellent service in our Pioneer regiments. The Hindu of the Panjab in his avoidance of “untouchables” has never gone to the absurd lengths of the high caste Madrasi, and the tendency is towards a relaxation of existing restrictions.

Mendicants. —Men of religion living on charity, wandering *fakirs*, are common sights, and beggars are met with in the cities, who sometimes exhibit their deformities with unnecessary insistence.

Kashmiris. —According to the census return the number of Kashmiri Musulmans, who make up 60 p.c. of the inhabitants of the Jhelam valley, was 765,442. They are no doubt mostly descendants of various Hindu castes, perhaps in the main of Hill Brahmans, but Islam has wiped out all tribal distinctions. Sir Walter Lawrence wrote of them: “The Kashmiri is unchanged in spite of the splendid Moghal, the brutal Afghan, and the bully Sikh. Warriors and statesmen came and went; but there was no egress, and no wish.... In normal times to leave their homes. The outside world was far, and from all accounts inferior to the pleasant valley.... So the Kashmiris lived their self-centred life, conceited, clever, and conservative.”

The Hindu Kashmiri Pandits numbered 55,276.

Tribes of Jammu. —Agricultural Brahmans are numerous in the Jammu province. Thakkars and Meghs are important elements of the population of the outer hills. The former are no doubt by origin Rajputs, but they have cast off many Rajput customs. The Meghs are engaged in weaving and agriculture, and are regarded as more or less impure by the higher castes.



Fig. 31. Blind Beggar

Gujars. —Gujars in the Maharaja's territories are almost always graziers. In 1911 they numbered 328,003.

Dard Tribes of Astor and Gilgit. —The people of Astor and Gilgit are Dards speaking Shina and professing Islam. Sir Aurel Stein wrote of them: "The Dard race which inhabits the valleys N. of (the Inner Himalaya) as far as the Hindu Kush is separated from the Kashmiri population by language as well as by physical characteristics.... There is little in the Dard to enlist the sympathies of the casual observer. He lacks the intelligence, humour, and fine physique of the Kashmiri, and though undoubtedly far braver than the latter, has none of the independent spirit and manly bearing which draw us towards the Pathan despite all his failings. But I can never see a Dard without thinking of the thousands of years of struggle they have carried on with the harsh climate and the barren soil of their mountains!"

¹Sand Buried Ruins of Khotan, pp. 14-15.



Fig.32. Dards.

Kanjutis. —The origin of the Kanjutis of Hunza is uncertain, and so are the relationships of their language.

Mongoloid Population of Ladakh. —The population of Ladakh and Baltistan is Mongoloid, but the Baltis (72,439) have accepted Islam and polygamy, while the Ladakhis have adhered to Buddhism and polyandry.

Ethnological theories. —In *The People of India* the late Sir Herbert Risley maintained that the inhabitants of Rajputana, nearly the whole of the Panjab, and a large part of Kashmir, whatever their caste of social status, belonged with few exceptions to a single racial type, which he called Indo-Aryan. The Biluches of Dera Ghazi Khan and the Pathans of the N.W.F. Province formed part of another group which he called Turko-Iranian. The people of a strip of territory on the west of the Jamna he held to be of the same type as the bulk of the inhabitants of the United Provinces, and this type he called Aryo-Dravidian. Finally the races occupying the hills in the north-east and the adjoining part of Kashmir were of Mongol extraction, a fact which no one will dispute. Of the Indo-Aryan type Sir Herbert Risley wrote: "The stature is mostly tall, complexion fair, eyes dark, hair on face plentiful, head long, nose narrow

and prominent, but not specially long." He believed that the Panjab was occupied by Aryans, who came into the country from the west or north-west with their wives and children, and had no need to contract marriages with the earlier inhabitants. The Aryo-Dravidians of the United Provinces resulted from a second invasion or invasions, in which the Aryan warriors came alone and had to intermarry with the daughters of the land, belonging to the race which forms the staple of the population of Central India and Madras. This theory was based on measurements of heads and noses, and it seems probable that deductions drawn from these physical characters are of more value than any evidence based on the use of a common speech. But it is hard to reconcile the theory with the facts of history even in the imperfect shape in which they have come down to us, or to believe that Sakas, Yuechi, and White Huns (see historical section) have left no traces of their blood in the province. If such there are, they may perhaps be found in some of the tribes on both sides of the Salt Range, such as Gakkhars, Janjuas, Awans, Tiwanas, Ghebas, and Johdras, who are fine horsemen and expert tent-peggers, not "tall heavy men without any natural aptitude for horsemanship," as Sir Herbert Risley described his typical Panjabi.

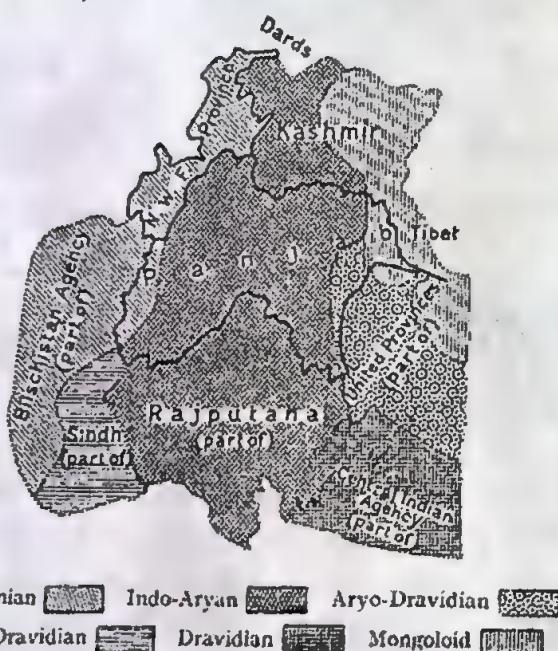


Fig. 33. Map showing races

Languages. —In the area dealt with in this book no less than eleven

languages are spoken, and the dialects are very numerous. It is only possible to tabulate the languages and indicate on the map the localities in which they are spoken. For the Panjab the figures of the recent census are:

A. 1. Tibeto-Chinese	41,607
B. Aryan:	
(a) Iranian:	
2. Pashtu	67,174
3. Biluchi	70,675
4. Kohistani	26
(b) Indian:	
5. Kashmiri	7,190
6. Pahari	993,363
7. Lahndi	4,253,566
8. Sindhi	24
9. Panjabi	14,111,215
10. Western Hindi	3,826,467
11. Rajasthani	725,850



Fig. 34. Map showing distribution of languages

The eastern part of the Indus valley in Kashmir forming the provinces of Ladakh and Baltistan is occupied by a Mongol population speaking Tibeto-Chinese dialects. Kashmiri is the language of Kashmir Proper, and various dialects of the Shina-Khowar group comprehensively described as Kohistani are spoken in astor, Gilgit, and Chilas, and to the west of Kashmir territory in Chitral and the Kohistan or mountainous country at the top of the Swat river valley. Though Kashmiri and the Shina-Khowar tongues belong to the Aryan group, their basis is supposed to be non-Sanskritic, and it is held that there is a strong non-sanskritic or Pisacha element also in Lahndi or western Panjabi, which is also the prevailing speech in the Hazara and Dera Ismail Khan districts of the N.W.F. Province, and is spoken in part of the Jammu province of Kashmir. Pashtu is the common language in Peshawar, Kohat, and Bannu, and is spoken on the western frontiers of Hazara and Dera Ismail Khan, and in the independent tribal territory in the west between the districts of the N.W.F. Province and the Durand Line and immediately adjoining the Peshawar district on the north. Rajasthani is a collective name for the dialects of Rajputana, which overflow into the Panjab, occupying a strip along the southern frontier from Bahawalpur to Gurgaon. The infiltration of English words and phrases into the languages of the province is a useful process and as inevitable as was the enrichment of the old English speech by Norman-French. But for the present the results are apt to sound grotesque, when the traveler, who expects a train to start at the appointed time, is told: "*tren late hai, lekin singal down hogaya*" (the train is late, but the signal has been lowered), or the criticism is passed on a popular officer: "*babut affable hai, lekin hand shake nahi karta*" (very affable, but doesn't shake hands).

CHAPTER X

THE PEOPLE (continued): RELIGIONS

Religions in N.W.F. Province. —In the N.W.F. Province an overwhelming majority of the population professes Islam. In 1911 there were 2,039,994 Musalmans as compared with 119,942 Hindus, 30,345 Sikhs, and 6585 Christians.

Religions in Kashmir. —In Kashmir the preponderance of Muhammadans is not so overwhelming. The figures are:

Muhammadans	..	2,398,320
Hindus	..	690,390
Buddhists	..	36,512
Sikhs	..	31,553

The Hindus belong mostly to the Jammu province, where nearly half of the population professes that faith. The people of Kashmir, Baltistan, Astor and Gilgit, Chilas and Hunza Nagar, are Musalmans. The Ladakhis are Buddhists.

Religions in Panjab. —The distribution by religions of the population of the Panjab and its native States in 1911 was:

Muhammadans	..	12,275,477 or 51 p.c.
Hindus	..	8,773,621 or 36 p.c.
Sikhs	..	2,883,729 or 12 p.c.
Others, chiefly Christian(199,751)		254,923 or 1 p.c.

The strength of the Muhammadans is in the districts west of the Bias and the Sutlej below its junction with the Bias. 83 p.c. of the subjects of the Nawab of Bahawalpur are also Muhammadans. In all this western region there are few Hindus apart from the shopkeepers and traders. On

on the borders of Tibet, where the scanty population professes Buddhism: While Hinduism is the predominant faith in the south-east, quite a fourth of the people there are Musalmans. Sikhs nowhere form a majority. The districts in the eastern part of the Central Plains where they constitute more than one-fifth of the population are indicated in the map. In six districts, Lahore, Montgomery, Gujranwala, Lyalpur, Hoshiarpur, and Ambala the proportion is between 10 and 20 p.c.

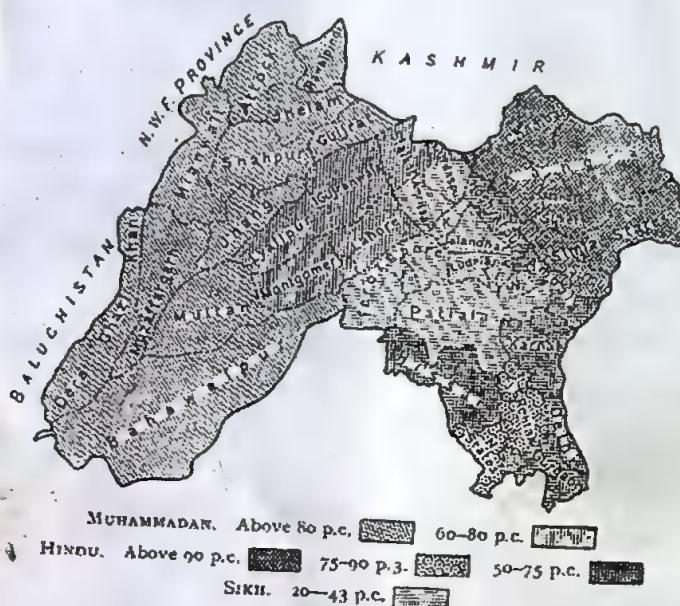


Fig. 35. Map showing distribution of religions

Growth and Decline in numbers. —There was a slight rise in the number of Muhammadans between 1901 and 1911. Their losses in the central districts, where the plague scourge has been heaviest, were counterbalanced by gains in the western tract, where its effect has been slight. On the other hand the decrease under Hindus amounts to nearly 15 p.c. The birth-rate is lower and the death-rate higher among Hindus than among Musalmans, and their losses by plague in the central and some of the south-eastern districts have been very heavy. A change of sentiment on the part of the Sikh community has led to many persons recording themselves as Sikhs who were formerly content to be regarded as Hindus. It must be remembered that one out of four of the recorded Hindus belongs to impure castes, who even in the Panjab pollute food and water

by their touch and are excluded from the larger temples. Since 1901 a considerable number of Chuhras or Sweepers have been converted to Islam and Christianity.

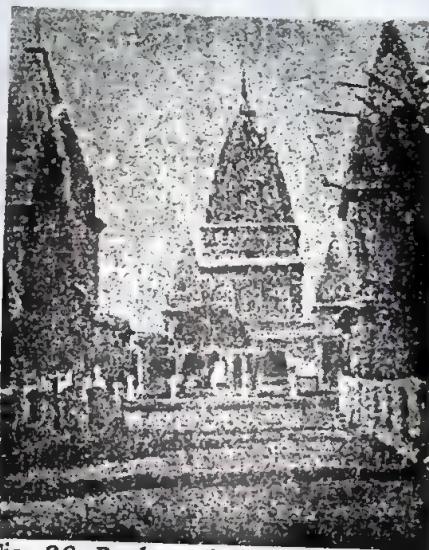


Fig. 36. Raghunath Temple, Jammu

Sikhs. —Notwithstanding heavy losses by plague Sikhs have increased by 37 p.c. A great access of zeal has led to many more Sikhs becoming *Kesdharis*, *Sajhdharis* or *Munas*, who form over one-fifth of the whole Sikh community, were in 1901 classed as Hindus. They are followers of Baba Nanak, cut their hair, and often smoke. When a man has taken the "pabul," which is the sign of his becoming a *Kesdhari* or follower of Guru Govind, he must give up the *hukka* and leave his hair unshorn. The future of Sikhism is with the *Kesdharis*.

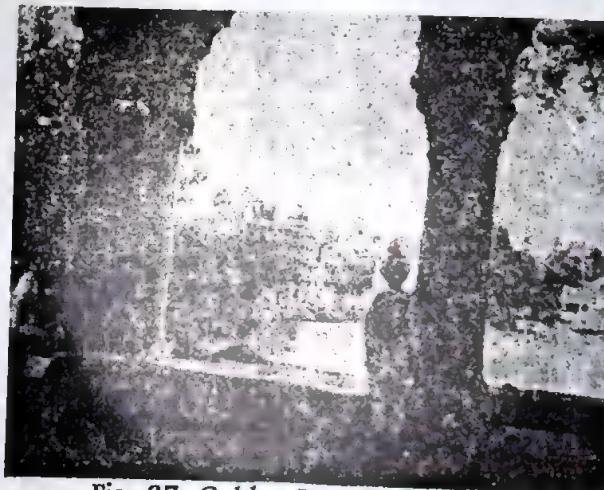


Fig. 37. Golden Temple, Amritsar

Muhammadans. —In the eastern districts the conversions to Islam were political, and Hindu and Muhammadan Rajputs live peaceably together in the same village. The Musalmans have their mosque for the worship of Allah, but were, and are still, not quite sure that it is prudent wholly to neglect the godlings. The conversion of the western Panjab was the result largely of missionary effort *Piri muridi* is a great institution there. Every man should be the "*murid*" or pupil of some holy man or *pir*, who combines the functions in the Roman Catholic Church of spiritual director in this world and the saint in heaven. The *pir* may be the custodian of some little saint's tomb in a village, or of some great shrine like that of Baba Farid at Pakpattan, or Bahawal Hakk at Multan, or Taunsa Sharif in Dera Ghazi Khan, or Golra in Rawalpindi. His own holiness may be more official than personal. About 1400 A.D. The Kashmiris were offered by their Sultan Sikandar the choice between conversion and exile, and chose the easier alternative. Like the western Panjabis they are above all things saint-worshippers. The ejaculations used to stimulate effort show this. The embankment builder in the south-western Panjab invokes the holy breath of Bahawal Hakk, and the Kashmiri boatman's cry "Ya Pir, dast gir," "Oh Saint, lend me a hand," is an appeal to their national saint.

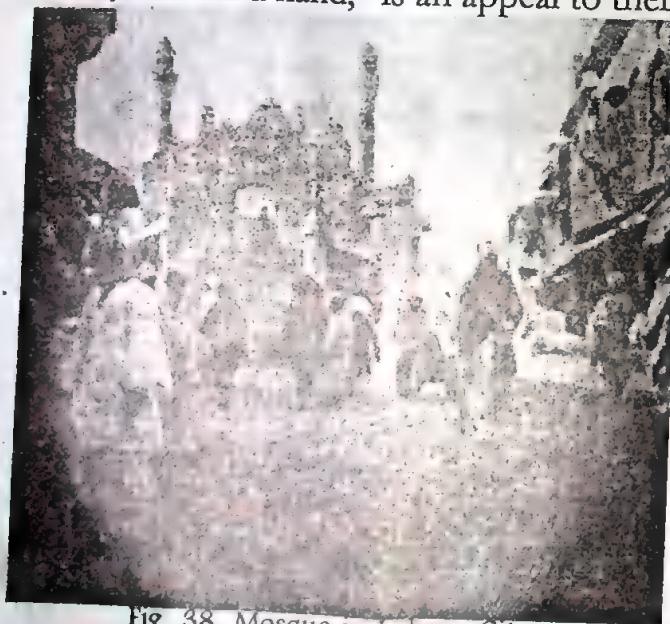


Fig. 38. Mosque in Lahore City.

Effect of Education. —The Musalmans of the western Panjab have great dislike to Sikhs, dating from the period of the political predominance of the latter. So far the result of education has been to accentuate

religious differences and animosities. Both Sikhs and Musalmans are gradually dropping ideas and observances retained in their daily life after they ceased to call themselves Hindus. On the other hand, within the Hindu fold laxity is now the rule rather than the exception, and the neglect of the old ritual and restrictions is by no means confined to the small but influential reforming minority which calls itself Arya Samaj.



Fig. 39. God and Goddess, Chamba

Christians. —The number of Christians increased threefold between 1901 and 1911. The Presbyterian missionaries have been especially successful in attracting large numbers of outcastes into the Christian Church.



Fig. 40. A Kulu godling and his attendants

Hinduism in the Panjab.—Hinduism has always been, and to-day is more than ever, a very elastic term. The Census Superintendent, himself a high caste Hindu, wrote: "The definition which would cover the Hindu of the modern times is that he should be born of parents not belonging to some recognized religion other than Hinduism, marry within the same limits, believe in God, respect the cow, and cremate the dead." There is room in its ample folds for the Arya Samajist, who rejects idol worship and is divesting himself of caste prejudices and marriage restrictions, and the most orthodox Sanatân dharmist, who carries out the whole elaborate daily ritual of the Brahmanical religion, and submits to all its complicated rules; for the ordinary Hindu trader, who is equally orthodox by profession, but whose ordinary religious exercises are confined to bathing in the morning; for the villager of the eastern districts, who often has the name of Parameshvar or the Supreme Lord on his lips, but who really worships the godlings, Guga Pir, Sarwar or Sultan Pir, Sitla (the small-pox goddess), and others, whose little shrines we see round the village site; and for the childish idolaters of Kulu, who carry their local deities about to visit each other at fairs, and would see nothing absurd in locking them all up in a dungeon if rain held off too long.

CHAPTER XI

THE PEOPLE (*Continued*): EDUCATION

Educational progress. —According to the census returns of 1911 there are not four persons per 100 in the province who are "literate" in the sense of being able to read and write a letter. The proportion of literacy among Hindus and Sikhs is three times as great as among Muhammadans. In 1911-12 one boy is six of school-going age was at school or college and one girl in 37. This may seem a meager result of sixty years of work, for the Government and Christian missionaries, who have had an honourable connection with the educational history of the province, began their efforts soon after annexation, and Director of Public Instruction was appointed as long ago as 1856. But a country of small peasant farmers is not a very hopeful educational field, and the rural population was for long indifferent or hostile. If an ex-soldier of the *Khalsa* had expressed his feelings, he would have used words like those of the "Old Pindari" in Lyall's poem, while the Muhammadan farmer, had he been capable of expressing his hostility, might have argued that the teaching his son could get in a village school would help him not at all in his daily work. Things are better now. We have improved our scheme of teaching, and of late raised the pay of the teachers, which is, however, still hardly adequate. Till a better class of teachers can be secured for primary schools, the best educational theories will not bear fruit in practice. The old indifference is weakening, and the most helpful sign is the increasing interest taken in towns in female education, a matter of the first importance for the future of the country.

Present position. —The present position is as follows:- The Government has made itself directly or indirectly responsible for the education of the province. At the headquarters of each district there is a high school for boys controlled by the Education Department. In each district there are Government middle schools, Anglovernacular or Vernacular, and primary schools, managed by the Municipal Committees and District Boards. Each middle school has a primary, and each high school a primary and a middle, department. For the convenience of pupils who cannot attend school while living at home hostels are attached to many middle and high schools. Fees are very moderate. In middle and high schools, where the income covers 56 p.c of the expenditure, they range from R.I (16 pence) monthly in the lowest class in which they are levied to Rs. 4 (5 shillings) in the highest class. In rural primary schools the children of agriculturists are exempt because they pay local rate, and others, when not exempt on the score of poverty, pay nominal fees. Besides the Government schools there are aided schools of the above classes usually of a sectarian character, and these, if they satisfy the standards laid down, receive grants. There is a decreasing, but still considerable, class of private schools, which make no attempt to satisfy the conditions attached to these grants. The *mullah* in the mosque teaches children passages of the Kuran by rote, or the shopkeeper's son is taught in a Mahajani school native arithmetic and the curious script in which accounts are kept. A boys' school of a special kind is the Panjab Chiefs' College at Lahore, intended for the sons of princes and men of high social position.

Technical Schools. —In an agricultural country like the Panjab there is not at present any large field for technical schools. The best are the Mayo School of Art and the Railway Technical School at Lahore. The latter is successful because its pupils can readily find employment in the railway workshops. Mr Kipling, the father of the poet, when principal of the former, did much for art teaching, and the present principal, Bhai Ram Singh, is a true artist. The Government Engineering School has recently been remodeled and removed to Rasul, where the head-works of the Lower Jhelam canal are situated.



Fig. 41. A School in the time preceding annexation.

(From a picture book said to have been prepared for Maharaja Dalip Singh)

Female Education. —Female education is still a tender plant, but of late growth has been vigorous. The Victoria May School in Lahore founded in 1908 has developed into the Queen Mary College, which provides an excellent education for girls of what may be called the upper middle class. There is a separate class for married ladies. Hitherto they have only been reached by the teaching given in their own homes by missionary ladies, whose useful work is now being imitated by the Hindu community in Lahore. There is an excellent Hindu Girls' Boarding School in Jalandhar. The Sikhs and the body of reformers known as the Dev Samaj have good girls' schools at Ferozepore. The best mission schools are the Kinnaird High School at Lahore and the Alexandra School at Amritsar. The North India School of Medicine for Women at Ludhiana, also a missionary institution, does admirable work. In the case of elementary schools the difficulty of getting qualified teachers is even greater than as regards boys schools.

Education of European Children. —There are special arrangements for the education of European and Anglo-Indian children. In this department the Roman Catholics have been active and successful. The best schools are the Lawrence Asylum at Sanawar, Bishop Cotton's School, Auckland House, and St Bede's at Simla, St Denys', the Lawrence Asy-

lum, and the Convent School at Murree.

The Panjab University. —The Panjab University was constituted in 1882, but the Government Arts College and Oriental College, the Medical College and the Law School at Lahore, which are affiliated with it, are of older date. The University is an examining body like London University. Besides the two Arts Colleges under Government management mentioned above there are nine private Arts Colleges aided by Government grants and affiliated to the University. Four of these are in Lahore, two, the Dayanand Anglo-Vedic and the Dial Singh Colleges, are Hindu institutions, one, the Islamia College, is Muhammadan, the fourth is the popular and efficient Forman Christian College. Four out of five art students read in Lahore. Of the Arts colleges outside Lahore the most important is the St Stephen's College at Delhi. The Khalsa School and College at Amritsar is a Sikh institution. The Veterinary College at Lahore is the best of its kind in India, and the Agricultural College at Lyallpur is a well-equipped institution, which at present attracts few pupils, but may play a very useful role in the future. There is little force in the reproach that we built up a super structure of higher education before laying a broad foundation of primary education. There is more in the charge that the higher educational food we have offered has not been well adapted to the intellectual digestions of the recipients.

Education in N.W.F. Province, Native States, and Kashmir. — The Panjab Native States and Kashmir are much more backward as regards education than the British Province. As is natural in a tract in which the population is overwhelmingly Musalman by religion and farming by trade the N.W.F. Province lags behind the Panjab. Six colleges in the States and the N.W.F. Province are affiliated to the Panjab University.

CHAPTER XII

ROADS AND RAILWAYS

Roads.—The alignment of good roads in the plains of the Panjab is easy, and the deposits of calcareous nodules or *kankar* often found near the surface furnish good metalling material. In the west the rainfall is so scanty and in many parts wheeled traffic so rare that it is often wise to leave the roads unmetalled. There are in the Panjab over 2000 miles of metalled, and above 20,000 miles of unmetalled roads. The greatest highway in the world, the Grand Trunk, which starts from Calcutta and ends at Peshawar, passes through the province from Delhi in the south-east to Attock in the extreme north-west corner, and there crosses the Indus and enters the N.W.F. Province. The greater part of the section from Karnal to Lahore had been completed some years before the Mutiny, that from Lahore to Peshawar was finished in 1863-64. A great loop road connects our arsenal at Ferozepore with the Grand Trunk Road at Lahore and Ludhiana. The fine metalled roads from Ambala to Kalka, and Kalka to Simla have lost much of their importance since the railway was brought to the hill capital. Beyond Simla the Kalka-Simla road is carried on for 150 miles to the Shipki Pass on the borders of Tibet, being maintained as a very excellent hill road adapted to mule carriage. A fine tonga road partly in the plains and partly in the hills joins Murree with Rawalpindi. From Murree it drops into the Jhelam valley crossing the river and entering Kashmir at Kohala. It is carried up the gorge of the Jhelam to Baramulla and thence through the Kashmir valley to Srinagar. A motor-car can be driven all the way from Rawalpindi to Srinagar. In the N.W.F. Province a great metalled road connects Peshawar, Kohat, Bannu, and Dera Ismail Khan.



Fig. 42. Poplar lined road to Srinagar

Railways. Main Lines. —It is just over fifty years since the first railway, a short line joining Lahore and Amritsar, was opened in 1862. Three years later Lahore was linked up with Multan and the small steamers which then plied on the Indus. Amritsar was connected with Delhi in 1870, and Lahore with Peshawar in 1883. The line from Peshawar to Lahore, and branching thence to Karachi and Delhi may be considered the Trunk Line. The railway service has been enormously developed in the past thirty years. In 1912 there were over 4000 miles of open lines. There are now three routes from Delhi to Lahore:

- (a) The N.W. Railway *via* Meerut and Saharanpur D.P. (on east of Jamna), and Ambala, Ludhiana, Jalandhar, Amritsar;
- (b) The Southern Panjab Railway *via* Jind, Rohtak, Bhatinda, and Ferozepore;
- (c) The Delhi-ambala-Kalka branch of the East Indian Railway from Delhi through Karnal to Ambala, and thence by the N.W. Railway. This is the shortest route.

The Southern Panjab Railway also connects Delhi with Karachi through its junction with the N.W. Railway at Samasta to the south of

Bahawalpur. Another route is by a line passing through Rewari and the Merta junction. Karachi is the natural seaport of the central and western Panjab. The S.P. Railway now gives an easy connection with Ferozepore and Ludhiana, and the enormous export of wheat, cotton, etc. from the new canal colonies is carried by several lines which converge at Khanewal, a junction on the main line, a little north of Multan.

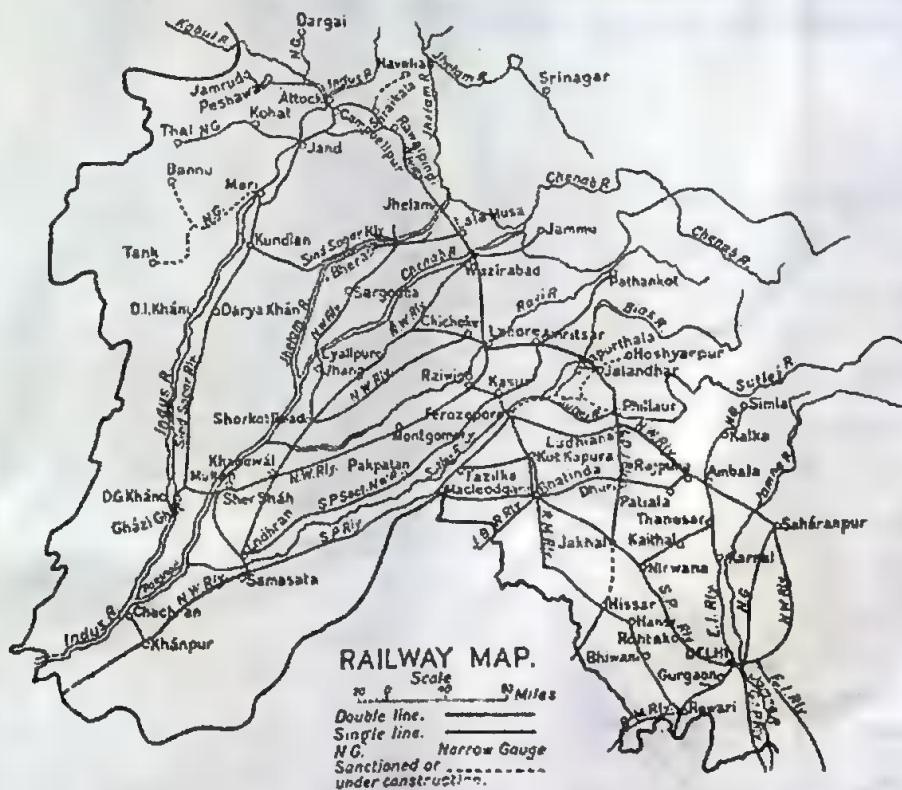


Fig. 43. Map showing railways

Railways. Minor Lines.—The Sind Sagar branch starting from Lala Musa between Lahore and Amritsar with smaller lines taking off further north at Golra and Campbellpur serves the part of the province lying north of the Salt Range. These lines converge at Kundian in the Mianwali district, and a single line runs thence southwards to points on the Indus opposite Dera Ismail Khan and Dera Ghazi Khan, and turning eastwards rejoins the trunk line at Sher Shah near Multan. There are a number of branch lines in the plains, some owned by native States. Strategically a very important one is that which crossing the Indus by the Khushalgarh bridge unites Rawalpindi with Kohat. The only hill railway is that from Kalka to Simla. A second is now under construction which, when com-

pleted, will connect Rawalpindi with Srinagar. All these lines with the exception of the branch of the E.I. Railway mentioned above are worked by the staff of the N.W. State Railway, whose manager controls inside and outside the Panjab some 5000 miles of open line. The interest earned in 1912 was 4 $\frac{1}{2}$ p.c., a good return when it is considered that the parts of the system to the north of the salt Range and the Sind Sagar railway were built primarily for strategic reasons.

CHAPTER XIII

CANALS

Importance of Canals. —One need have no hesitation in placing among the greatest achievements of British rule in the Panjab the magnificent system of irrigation canals which it has given to the province. Its great alluvial plain traversed by large rivers drawing an unfailing supply of water from the Himalayan snows affords an ideal field for the labours of the canal engineer. The vastness of the arid areas which without irrigation yield no crops at all or only cheap millets and pulses makes his works of inestimable benefit to the people and a source of revenue to the State.

Canals before annexation. —In the west of the province we found in existence small inundation canals dug by the people with some help from their rulers. These only ran during the monsoon season, when the rivers were swollen. In 1626 Shahjahan's Persian engineer, Ali Mardan Khan, brought to Delhi the water of the canal dug by Firoz Shah as a monsoon channel and made perennial by Akbar. But during the paralysis of the central power in the eighteenth century the channels became silted up. The same able engineer dug a canal from the Ravi near Madhopur to water the royal gardens at Lahore. What remained of this work at annexation was known as the Hasli.

Extent of Canal Irrigation. —In 1911-12, when the deficiency of the rainfall made the demand for water keen, the canals of the Panjab and the N.W.F. Province irrigated 8 1/2 millions of acres. The figures are:

		<i>Panjab</i>	
A.	Permanent Canals	Acres	Interest earned %
1.	Western Jamna	775,450	$7\frac{3}{4}$

2.	Sirhind	1,609,458	8
3.	Upper Bari Doab	1,156,808	11 $\frac{1}{2}$
4.	Lower Chenab	2,334,090	34
5.	Lower Jhelam	801,649	10 $\frac{1}{2}$
B.	Monsoon Canals..	1,654,437	
	Total	8,331,892	

N.W. Frontier Province

	Acres	Interest earned %
Lower Swat River	157,650	9 $\frac{3}{4}$
Two minor canals	67,510	
Total	225,160	

On the Sirhind Canal, on which the demand fluctuates greatly with the character of the season, the area was twice the normal. The three canals of the Triple Project will, when fully developed, add 1,871,000 acres to the irrigated area of the Panjab, and the Upper Swat Canal will increase that of the N.W.F. Province by 381,000 acres. The canals will therefore in a year of drought be able to water over ten millions of acres without taking account of possible extensions if a second canal should be drawn from the Sutlej. The money spent from imperial funds on Panjab canals has exceeded twelve millions sterling, and no money has ever been better spent. In 1910-11, when the area irrigated was a good deal less than in 1911-12, the value of the crops raised by the use of canal water was estimated at about 207 millions of rupees or nearly £14,000,000. It is only possible to note very briefly the steps by which this remarkable result has been achieved.

Western Jamna Canal. —Soon after the assumption of authority at Delhi in 1803 the question of the old Canal from the Jamna was taken up. The Delhi Branch was reopened in 1819, and the Hansi Branch six years later. In the famine year 1837-38 nearly 400,000 acres were irrigated. For more than half a century that figure represented the irrigating capacity of the canal. The English engineers in the main retained the faulty Moghal alignment, and waterlogging of the worst description developed. The effect on the health of the people was appalling. After long delay the canal was remodeled. The result has been most satisfactory in every way. In the last decade of the nineteenth century the Sirsa Branch and the

Nardak Distributary were added, to carry water to parts of the Karnal and Hissar districts where any failure of the monsoon resulted in wide-spread loss of crops. If a scheme to increase the supply can be carried out, further extension in tracts now very liable to famine will become possible. In the six years ending 1910-11 the interest earned exceeded 8 p.c.

Upper Bari Doab Canal.—The head works of the Upper Bari Doab Canal are above Madhopur near the point where the Ravi leaves the hills. The work was started soon after annexation, but only finished in 1859. Irrigation has grown from 90,000 acres in 1860-61 to 533,000 in 1880-81, 861,000 in 1900-1, and 1,157,000 in 1911-12. The later history of the canal consists mainly of great extensions in the arid Lahore district, and the irrigation there is now three-fifths of the whole. In parts of Amritsar, and markedly near the city, water-logging has become a grave evil, but remedial measures have now been undertaken. The interest earned on the capital expenditure in the six years ending 1910-11 averaged 11 $\frac{1}{2}$ p.c.

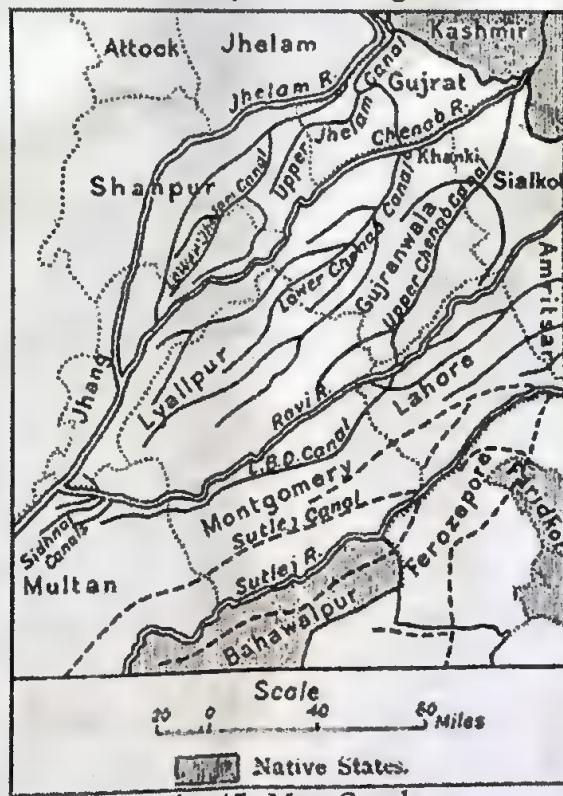


Fig. 45. Map-Canals

Sirhind Canal—A quarter of a century passed after the upper Bari

Doab Canal began working before the water of the Sutlej was used for irrigation. The Sirhind Canal weir is at Rupa where the river emerges from the Siwaliks. Patiala, Jind, and Nabha contribute to the cost, and own three of the five branches. But the two British branches are entitled to nearly two-thirds of the water, which is utilized in the Ludhiana and Ferozepore districts and in the Faridkot State. The soil of the tract command is for the most part a light sandy loam, and in years of good rainfall it repays dry cultivation. The result is that the area watered fluctuates largely. But in the six years ending 1910-11 the interest earned averaged 7 p.c., and the power of expansion in a bad year is a great boon to the peasantry.

Canal extensions in Western Panjab.—In the last quarter of a century the chief task of the Canal Department in the Panjab has been the extension of irrigation to the Rechna and Jech Doabs and the lower part of the Bari Doab. All three contained large areas of waste belonging to the State, mostly good soil, but incapable of cultivation owing to the scanty rainfall. Colonization has therefore been an important part of all the later canal projects. The operations have embraced the excavation of five canals.

Lower Chenab Canal.—The lower Chenab canal is one of the greatest irrigation works in the world, the area commanded being $3\frac{1}{3}$ million acres, the average discharge four or five times that of the Thames at Teddington, and the average irrigated area $2\frac{1}{4}$ million acres. There are three main branches, the Rakh, the Jhang, and the Gugera. The supply is secured by a great weir built across the Chenab river at Khanki in the Gujranwala district, and the irrigation is chiefly in the Gujranwala, Lyallpur, and Jhang districts. In the four years ending 1911-12 the average interest earned was 28 p.c., and in future the rate should rarely fall below 30 p.c. The capital expenditure has been a little over £2,000,000. The interest charges were cleared about five years after the starting of irrigation, and the capital has already been repaid to the State twice over.

Lower Jhelum Canal.—The lower Jhelum Canal, which waters the tract between the Jhelum and Chenab in the Shahpur and Jhang districts, is a smaller and less profitable work. The culturable commanded area is about one million acres. The head-works are at Rasul in the Gujrat dis-

trict. Irrigation began in 1901. In the four years ending 1911-12 the average area watered was 748,000 acres and the interest earned exceeded 10 p.c.

Triple Project - Upper Jhelam and Upper Chenab Canals and Lower Bari Doab Canal. - The Lower Chenab Canal takes the whole available supply of the Chenab river. But it does not command a large area in the Rechna Doab lying in the west of Gujranwala, in which rain cultivation is very risky and well cultivation is costly. No help can be got from the Ravi, as the Upper Bari Doab Canal exhausts its supply. Desirable as the extension of irrigation in the areas mentioned above is, the problem of supplying it might well have seemed insuperable. The bold scheme known as the Triple Project which embraces the construction of the Upper Jhelam, Upper Chenab, and Lower Bari Doab Canals, is based on the belief that the Jhelam river has even in the cold weather water to spare after feeding the Lower Jhelam Canal. The true *raison d'etre* of the Upper Jhelam Canal, whose head-works are at Mangla in Kashmir a little north of the Gujrat district, is to throw a large volume of water into the Chenab at Khanki, where the Lower Chenab Canal takes off, and so set free an equal supply to be taken out of the Chenab higher up at Merala in Sialkot, where are the head-works of the Upper Chenab Canal. But the Upper Jhelam Canal will also water annually some 345,000 acres in Gujrat and Shahpur. The Upper Chenab Canal will irrigate 648,000 acres mostly in Gujranwala, and will be carried across the Ravi by an aqueduct at Balloke in the south of Lahore. Henceforth the canal is known as the Lower Bari Doab, which will water 882,000 acres, mostly owned by the State, in the Montgomery and Multan districts. On the other two canals the area of Government land is not large. The Triple Project is approaching completion, and irrigation from the Upper Chenab Canal has begun. The engineering difficulties have been great, and the forecast does not promise such large gains as even the Lower Jhelam Canal. But a return of 7 1/2 p.c. is expected.

Monsoon or Inundation Canals. - The numerous monsoon or inundation canals, which take off from the Indus, Jhelam, Chenab, Ravi, and Sutlej, though individually petty works, perform an important office in the thirsty south-western districts. By their aid a *kharif*-crop can be

raised without working the wells in the hot weather, and with luck the fallow can be well soaked in autumn, and put under wheat and other spring crops. For the maturing of these crops a prudent cultivator should not trust to the scanty cold weather rainfall, but should irrigate them from a well. The Sidhnai has a weir, but may be included in this class, for there is no assured supply at its head in the Ravi in the winter. In 1910-11 the inundation canals managed by the State watered 1,800,000 acres. There are a number of private canals in Ferozepore, Shahpur, and the hill district of Kangra. In Ferozepore the district authorities take a share in the management.

Colonization of Canal Lands. —The colonization of huge areas of State lands has been an important part of new canal schemes in the west of the Panjab. When the Lower Chenab Canal was started the population of the vast Bar tract which it commands consisted of a few nomad cattle owners and cattle thieves. It was a point of honour to combine the two professions. Large bodies of colonists were brought from the crowded districts of the central Panjab. The allotments to peasants usually consisted of 55 acres, a big holding for a man who possibly owned only four or five acres in his native district. There were larger allotments known as yeoman and capitalist grants, but the peasants are the only class who have turned out quite satisfactory farmers. Colonization began in 1892 and was practically complete by 1904, when over 1,800,000 acres had been allotted. To save the peasants from the evils which an unrestricted right of transfer was then bringing on the heads of many small farmers in the Panjab it was decided only to give them permanent inalienable tenant right. The Panjab Alienation of Land Act, No. XIII of 1900, has supplied a remedy generally applicable, and the peasant grantees are now being allowed to acquire ownership on very easy terms. The greater part of the colony is the new Lyallpur district, which had in 1911 a population of 857,511 souls.

On the Lower Jhelam Canal the area of colonized land exceeds 400,000 acres. A feature of colonization on that canal is that half the area is held on condition of keeping up one or more brood mares, the object being to secure a good class of remounts. Succession to these grants is governed by primogeniture. On the Lowe Bari Doab Canal a very large area

is now being colonized.

Canals of the N.W.F. Province.—Hemmed in as the N.W.F. Province is between the Indus and the Hills, its canals are insignificant as compared with the great irrigation works of the Panjab. The only ones of any importance are in the Peshawar Valley. These draw their supplies from the Kabul, Bara, and Swat rivers, but the works supplied by the first two streams only command small areas. The Lower Swat Canal was begun in 1876, but the tribesmen were hostile and the diggers had to sleep in fortified enclosures. The work was not opened till 1885. A reef in the river has made it possible to dispense with a permanent weir. The country is not an ideal one for irrigation, being much cut up by ravines. But a large area has been brought under command, and the irrigation has more than once exceeded 170,000 acres. In 1911-12 it was 157,650 acres, and the interest earned was 9 $\frac{3}{4}$ p.c. The Upper Swat Canal, which was opened in April 1914, was a more ambitious project, involving the tunneling at the Malakand of 11,000 feet of solid rock. The commanded area is nearly 450,000 acres, including 40,000 beyond our administrative frontier. The estimated cost is Rs. 18,240,000 or over £1,200,000 and the annual irrigation expected is 381,562 acres.



Fig. 46. Map of Canals of Peshawar District

CHAPTER XIV

AGRICULTURE AND CROPS

Classification by zones. —In order to give an intelligible account of the huge area embraced by the Panjab, N.W.F. Province, and Kashmir it is necessary to make a division of the area into zones. Classification must be on very broad lines based on differences of altitude, rainfall, and soil, leading to corresponding differences in the cultivation and the crops. For statistical purposes districts must be taken as a whole, though a more accurate classification would divide some of them between two zones.

Classes of Cultivation. —The broadest division of cultivation is into irrigated and unirrigated, the former including well (*chabi*), canal (*nabri*), and *abi*. The last term describes a small amount of land watered from tanks or *jhils* in the plains and a larger area in the hills irrigated by *kubls* or small artificial channels "Unirrigated" embraces cultivation dependent on rain (*barani*) or on flooding or percolation from rivers (*sailab*). (See Table II.)

Harvests. —There are two harvests, the autumn or *kharif*, and the spring or *rabi*. The autumn crops are mostly sown in June and July and reaped from September to December. Cotton is often sown in March. Cane planted in March and cut in January and February is counted as a *kharif* crop. The spring crops are sown from the latter part of September to the end of December. They are reaped in March and April. Roughly in the Panjab three-fifths of the crops belong to the spring harvest. In the N.W.F. Province the proportion is somewhat higher. In Kashmir the autumn crop is by far the more important.

Implements of Husbandry and Wells. —The implements of hus-

bandry are simple but effective in a land where as a rule there is no advantage in stirring up the soil very deep. With his primitive plough (*bal*) and a wooden clodcrusher (*sohaga*) the peasant can produce a tilth for a crop like cane which it would be hard to match in England. There are two kinds of wells, the *charsa* or rope and bucket well and the *barat* or Persian wheel.



Fig. 47. Persian Wheel Well and Ekka

Rotations. —The commonest rotation in ordinary loam soils is to put in a spring and autumn crop in succession and then let the land lie fallow for a year. Unless a good deal of manure is available this is the course to follow, even in the case of irrigated land. Some poor hard soils are only fit for crops of coarse rice sown after the embanked fields have been filled in the monsoon by drainage from surrounding waste. Other lands are cropped only in the autumn because the winter rainfall is very scanty. Flooded lands are often sown only for the spring harvest.

Cattle, Sheep, and Goats. —In 1909 there were in the British districts of the Panjab 4 $\frac{1}{4}$ million bullocks and 625,000 male buffaloes available to draw 2,169,000 ploughs and 288,000 carts, thresh the corn, and work a quarter of a million wells, besides sugar, oil, and flour mills. The cattle of the hills, N.W. Panjab, and riverain tracts are undersized, but in the uplands of the Central Panjab and S.E. districts fine oxen are used. The horned cattle share 18 millions of pasture land, much extremely poor, with 4 million sheep and 5 $\frac{1}{2}$ million goats. Hence the enormous area

devoted to fodder crops.

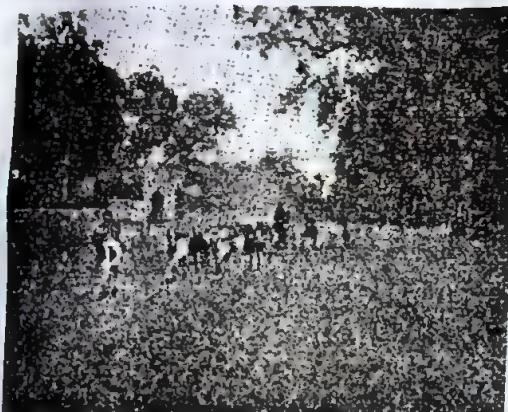


Fig. 48. A drove of goats - Lahore

Zones. —Six zones can be distinguished, but, as no district is wholly confined to the mountain zone, it must for statistical purposes be united to the submontane zone:

(a) Mountain above 5000 feet	Panjab — Kangra, Simla, Native States in Hills, Ambala, Hoshiarpur.
(b) Submontane	N.W.F. Province. Hazara, Kashmir — whole
(c) North Central Plain	Panjab — Gujrat, Sialkot, Gurdaspur, Amritsar, Jalandhar, Ludhiana, Kapurthala, Malerkotla, Powadh tract in Phulkian States.
(d) North-West Area	Panjab — Rawalpindi, Jhelam, Attock, Mianwali. N.W.F.P. — Peshawar, Kohat, Bannu.
(e) South-Western Plains	Panjab — Gujranwala, Lahore, Shahpur, Jhang, Lyallpur, Montgomery, Multan, Muzaffargarh, Dera Ghazi Khan, Bahawalpur. N.W.F.P. — Dera Ismail Khan.
(f) South-Eastern Area	Panjab — Karnal, Rohtak, Gurgaon, Hissar, Ferozepore, Faridkot, Jangal tract in Phulkian States, Native States territory adjoining Gurgaon and Rohtak.

Mountain and Submontane Zones. —In the Mountain Zone the fields are often very minute, consisting of narrow terraces supported by stone revetments built up the slopes of hills. That anyone should be ready to spend time and labour on such unpromising material is a sign of pressure of population on the soil, which is a marked feature of some hill tracts.

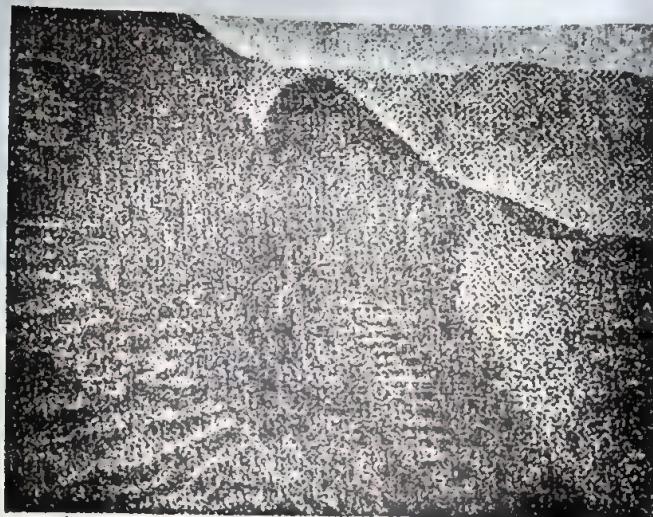


Fig. 49. A steep bit of hill cultivation, Hazara

Below 8000 feet the great crop is maize. Potatoes have been introduced near our hill stations. The chief pulse of the mountain zone is *kulath* (*Dolichos biflorus*), eaten by the very poor. Wheat ascends to 8000 or 9000 feet, and at the higher levels is reaped in August. Barley is grown at much greater heights. Buckwheat (*ugal, trumba, drawi*), amaranth (*chaulai, ganhair, sariara*), and a tall chenopod (*bathu*) are grown in the mountain zone. Buckwheat is common on poor stony lands.

The only comparatively flat land is one the banks above river beds, which are devoted to rice cultivation, the water being conducted to the embanked fields by an elaborate system of little canals or *kubls*. This is the only irrigation in the mountains, and is much valued. The Submontane Zone has a rainfall of from 30 to 40 inches. Well irrigation is little used and the dry crops are generally secure. Wheat and maize are the great staples, but gram and *chari*, i.e. *jowar* grown for fodder, are also important. Some further information about Kashmir agriculture will be found in a later chapter. For full details about classes of cultivation and crops in all the zones Tables II, III and IV should be consulted.



Fig.50. Preparing rice field in the Hills

North Central Panjab Plain. —The best soils and the finest tillage are to be found in the North Central Zone. Gujrat has been included in it, though it has also affinities in the north with the North-West area, and in the south with the South-Western plain. The rainfall varies from 25 to 35 inches. One-third of the cultivated area is protected by wells, and the well cultivation is of a very high class in Ludhiana and Jalandhar, where heavily manured maize is followed by a fine crop of wheat, and cane is commonly grown. In parts of Sialkot and Gujrat the well cultivation is of a different type, the area served per well being large and the object being to protect a big acreage of wheat in the spring harvest. The chief crops in this zone are wheat and *chari*. The latter is included under "Other Fodder" in Tables III and IV.

North-Western Area. —The plateau north of the Salt Range has a very clean light white sandy loam soil requiring little ploughing and no weeding. It is often very shallow, and this is one reason for the great preference for cold weather crops. *Kharif* crops are more liable to be burned up. Generally speaking the rainfall is from 15 to 25 inches, the proportion falling in the winter and spring being larger than elsewhere. There is, except in Peshawar and Banu, where the conditions involve a considerable divergence from the type of this zone, practically no canal irrigation. The well irrigation is unimportant and in most parts consists

of a few acres round each well intensively cultivated with market gardening crops. The dry crops are generally very precarious. In Mian wali the Indus valley is a fine tract, but the harvests fluctuate greatly with the extent of the floods. The Thal in Mianwali to the south of the Sind Sagar railway is really a part of the next zone.

The South-Western Plains. —This zone contains nine districts. With the exception of the three on the north border of the zone they have a rainfall of from 5 to 10 inches. Of these six arid districts, only one, Montgomery, has any dry cultivation worth mentioning. In the zone as a whole three-fourths of the cultivation is protected by canals or wells, or by both. In the lowlands near the great rivers cultivation depends on the floods brought to the land direct or through small canals which carry water to parts which the natural overflow would not reach. In the uplands vast areas formerly untouched by the plough have been brought under tillage by the help of perennial canals, and the process of reclamation is still going on. The Thal is a large sandy desert which becomes more and more worthless for cultivation as one proceeds southwards. In the north the people have found out of late years that this unpromising sand can not only yield poor *kharif* crops, but is worth sowing with gram in the spring harvest. The expense is small, and a lucky season means large profits. In Dera Ghazi Khan a large area of "pat" below the hills is dependent for cultivation on torrents. The favourite crop in the embanked fields into which the water is diverted is *jowar*.

The South-Eastern Plains. —In the south-eastern Panjab except in Hissar and the native territory on the border of Rajputana, the rainfall is from 20 to 30 inches. In Hissar it amounts to some 15 inches. These are averages; the variations in total amount and distribution over the months of the year are very great. In good seasons the area under dry crops is very large, but the fluctuations in the sown acreage are extraordinary, and the matured is often far below the sown area. The great crops are gram and mixtures of wheat or barley with gram in the spring, and *bajra* in the autumn, harvest. Well cultivation is not of much importance generally, though some of it in the Jamna riverain is excellent. The irrigated cultivation depends mainly on the Western Jamna and Sirhind canals, and the

great canal crops are wheat and cotton. This is the zone in which famine conditions are still most to be feared.

In the Panjab as a whole about one-third of the cultivated area is yearly put under wheat, which with *bajra* and maize is the staple food of the people. A large surplus of wheat and oil-seeds is available for export.

CHAPTER XV

HANDICRAFTS AND MANUFACTURES

Handicrafts. —The chief handicrafts of the province are those of the weaver, the shoemaker, the carpenter, the potter, and the worker in brass and copper. The figures of the 1911 census for each craft including dependents were: weavers 883,000; shoemakers 540,000; carpenters 381,000; potters and brickmakers 349,000; metalworkers 240,000. The figures for weavers include a few working in factories. The hand-spun cotton-cloth is a coarse strong fabric known as "*khaddar*" with a single warp and weft. "*Khes*" is a better article with a double warp and weft. "*Sut*" is a smooth cloth with coloured stripes used for women's trousers. A superior kind of checked "*khes*" known as "*gabrun*" is made at Ludhiana. The native process of weaving is slow and the weavers are very poor. The Salvation Army is trying to introduce an improved hand loom. Fine "*lungis*" or turbans of cotton with silk borders are made at Ludhiana, Multan, Peshawar, and elsewhere. Effective cotton printing is carried on by very primitive methods at Kot Kamalia and Lahore. Ludhiana and Lahore turn out cotton *daris* or rugs. Coarse woollen blankets or *lois* are woven at various places, and coloured felts or *namdas* are made at Ludhiana, Khushad, and Peshawar. Excellent imitations of Persian carpets are woven at Amritsar, and the Srinagar carpets do credit to the Kashmiris artistic taste. The best of the Amritsar carpets are made of *pashm*, the fine underwool of the Tibetan sheep, and *pashmina* is also used as a material for *choghas* (dressinggowns), etc. Coarse woollen cloth or *pattu* is woven in the Kangra hills for local use. At Multan useful rugs are made whose fabric is a mix-

ture of cotton and wool. More artistic are the Biluch rugs made by the Biluch women with geometrical patterns. These are excellent in colouring. They are rather difficult to procure as they are not made for sale. The weaving of China silk is a common industry in Amritsar, Bahawalpur, Multan, and other places. The *phulkari* or silk embroidery of the village maidens of Hissar and other districts of the Eastern Panjab, and the more elaborate gold and silver wire embroideries of the Delhi bazaars, are excellent. The most artistic product of the plains is the ivory carving of Delhi. As a wood-carver the Panjabi is not to be compared with the Kashmiri. His work is best fitted for doorways and the bow windows or *bokharchas* commonly seen in the streets of old towns. The best carvers are at Bhera, Chiniot, Amritsar, and Batala. The European demand has produced at Simla and other places an abundant supply of cheap articles of little merit. The inlaid work of Chiniot and Hoshiarpur is good, as is the lacquer-work of Pakpattan. The papier mache work of Kashmir has much artistic merit (Fig. 54), and some of the repousse silver work of Kashmir is excellent.

The craft of the *thathera* or brass worker is naturally most prominent in the Eastern Panjab, because Hindus prefer brass vessels for cooking purposes. Delhi is the great centre, but the trade is actively carried on at other places, and especially at Jagadhri.

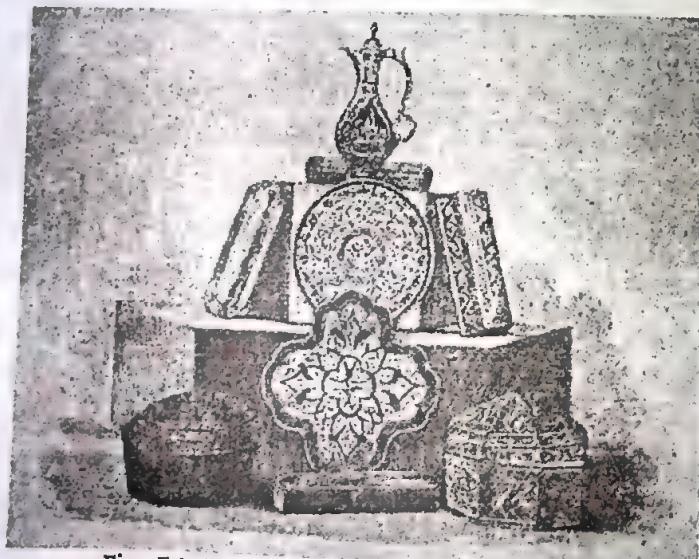


Fig. 54. Papier mache work of Kashmir

Unglazed pottery is made practically in every village. The blue enam-

eled pottery of Multan and the glazed Delhi china ware are effective. The manufacture of the latter is on a very petty scale.

Factories. —The factory industries of the Panjab are still very small. In 1911 there were 268 factories employing 28,184 hands. The typical Panjab factory is a little cotton ginning or pressing mill. The grinding of flour and husking of rice are sometimes part of the business. The number of these mills rose in the 20 years ending 1911 from 12 to 202, and there are complaints that there are now too many factories. Cotton-spinning has not been very successful and the number of mills in 1911, eight, was the same as in 1903-4. The weaving is almost entirely confined to yarn of low counts. Part is used by the hand-loom weavers and part is exported to the United Provinces. Good woolen fabrics are turned out at a factory at Dhariwal in the Gurdaspur district. There were in 1911 fifteen flour mills, ten ironworks, three breweries, and one distillery.



Fig. 55. The Potter.

(From a picture book said to have been prepared for Maharaja Dalip Singh)

Joint-Stock Companies. —The Panjab has not reached the stage where the joint-stock business successfully takes the place of the family banking or factory business. In 1911 there were 194 joint-stock companies. But many of these were provident societies, the working of which has been attended with such abuses that a special act has been passed for their control. A number of banks and insurance companies have also sprung up of late years. Of some of these the paid up capital is absurdly small, and the recent collapse of the largest and of two smaller native

banks has drawn attention to the extremely risky nature of the business done. Of course European and Hindu family banking businesses of the *old type* stand on quite a different footing. Some of the cotton and other mills are joint-stock concerns.

CHAPTER XVI

EXPORTS AND IMPORTS

Trade.—In 1911-12 the exports from the Panjab, excluding those by land to Central Asia, Ladakh, and Afghanistan, were valued at Rs. 27,63,21,000 (£18,421,000), of which 61 p.c. went to Karachi and about 10 p.c. consisted of wheat, nearly the whole of which was dispatched to Karachi. All other grains and pulses were about equal in value to the wheat. "Gram and other pulses" (18 p.c. of total exports) was the chief item. Raw cotton accounts for 15, and oil-seeds for 10 p.c. The imports amounted in value of Rs. 30,01,28,000 (£20,008,000), little more than one-third being received from Karachi. Cotton piece goods (Foreign 22, Indian 8 $\frac{1}{2}$ p.c.) make up one-third of the total. The other important figures are sugar 12, and metals 11 p.c. The land trade with Afghanistan, Central Asia, and Ladakh is insignificant, but interesting as furnishing an example of modes of transport which have endured for many centuries, and of the pursuit of gain often under appalling physical difficulties.

CHAPTER XVII

HISTORY-PRE-MUHAMMADAN PERIOD, 500 B.C. -1000 A.D.

In Hindu period relations of Panjab were with western kingdoms. —The large tract included in the British province of the Panjab which lies between the Jamna and the Ghagar is, having regard to race, language, and past history, a part of Hindustan. Where "Panjab" is used without qualification in this section the territories west of the Ghagar and south of Kashmir are intended. The true relations of the Panjab and Kashmir during the Hindu period were, except for brief intervals, with Persia, Afghanistan, and Turkistan rather than with the great kingdoms founded in the valley of the Ganges and the Jamna.

Normal division into petty kingdoms and tribal confederacies.

—The normal state of the Panjab in early times was to be divided into a number of small kingdoms and tribal republics. Their names and the areas which they occupied varied from time to time. Names of kingdoms that have been rescued from oblivion are Gandhara, corresponding to Peshawar and the valley of the Kabul river, Urasa or Hazara, where the name is still preserved in the Orash plain Taxila, which may have corresponded roughly to the present districts of Rawalpindi and Attock with a small part of Hazara, Abhisara or the low hills of Jammu, Kashmir, and Trigartta, with its capital Jalandhara, which occupied most of the Jalandhar division north of the Sutlej and the States of Chamba, Suket and Mandi. The historians of Alexander's campaigns introduce us also to the kingdoms of the elder Poros on both banks of the Jhelam, of the younger Poros east of the Chenab, and of Sophytes (Saubhuti) in the neighbour-

hood of the Salt Range. We meet also with tribal confederacies, such as in Alexander's time those of the Kathaioi on the upper, and of the Malloi on the lower, Ravi.

Invasion by Alexander, 327-325 B.C. —The great Persian king, Darius, in 512 B.C. pushed out the boundary of his empire to the Indus, then running in a more easterly course than today¹. The army with which Xerxes invaded Greece included a contingent of Indian bowmen². When Alexander overthrew the Persian Empire and started on the conquest of India, the Indus was the boundary of the former. His remarkable campaign lasted from April, 327 B.C., when he led an army of 50,000 or 60,000 Europeans across the Hindu Kush into the Kabul valley, to October, 325, when he started from Sindh on his march to Persia through Makran. Having cleared his left flank by a campaign in the hills of Buner and Swat, he crossed the Indus sixteen miles above Attock near Torbela. The King of Taxila, whose capital was near the Margalla pass on the north border of the present Rawalpindi district, had prudently submitted as soon as the Macedonian army appeared in the Kabul valley. From the Indus Alexander marched to Taxila, and thence to the Jhelam (Hydaspes), forming a camp near the site now occupied by the town of that name in the country of Poros. The great army of the Indian king was drawn up to dispute the passage probably not very far from the eastern end of the present railway bridge. Favoured by night and a monsoon rain-storm—it was the month of July, 326 B.C.—Alexander succeeded in crossing some miles higher up into the Karri plain under the low hills of Gujrat. Here, somewhere near the line now occupied by the upper Jhelam Canal, the Greek soldiers gave the first example of a feat often repeated since, the route of a large and unwieldy Indian army by a small, but mobile and well-led, European force. Having defeated Poros, Alexander crossed the Chenab (Akesines), stormed Sangala, a fort of the Kathaioi on the upper Ravi (Hydraotes) and advanced as far as the Bias (Hyphasis). But the weary soldiers insisted that this should be the bourn of their eastward march, and, after setting up twelve stone altars on the farther side,

1. See Sykes' History of Persia, pp. 179-180; also Herodotus III. 94 and 98 and IV. 44.

2. "The Indians clad with garments made of cotton had bows of cane and arrows of cane tipped with iron." —Herodotus VII. 65

Alexander in September, 326 B.C., reluctantly turned back. Before he left the Panjab he had hard fighting with the Malloi on the lower Ravi, and was nearly killed in the storm of one of their forts. Alexander intended that his conquests should be permanent, and made careful arrangements for their administration. But his death in June, 323 B.C., put an end to Greek rule in India. Chandra Gupta Maurya expelled the Macedonian garrisons, and some twenty years later Seleukos Nicator had to cede to him Afghanistan.

Maurya Dominion and Empire of Asoka, 323-231 B.C.—Chandra Gupta is the Sandrakottos, to whose capital at Pataliputra (Patna) Seleukos sent Megasthenes in 303 B.C. The Greek ambassador was a diligent and truthful observer, and his notes give a picture of a civilized and complex system of administration. If Chandra Gupta was the David, his grandson, Asoka, was the Solomon of the first Hindu Empire. His long reign, lasting from 273 to 231 B.C., was with one exception a period of profound peace deliberately maintained by an emperor who, after his conversion to the teaching of Gautama Buddha, thought war a sin. Asoka strove to lead his people into the right path by means of pithy abstracts of the moral law of his master graven on rocks and pillars. It is curious to remember that this missionary king was peacefully ruling a great empire in India during the twenty-four years of the struggle between Rome and Carthage, which we call the first Punic War. Of the four Viceroys who governed the outlying provinces of the empire one had his headquarters at Taxila. One of the rock edicts is at Mansehra in Hazara and another at Shahbazgarhi in Peshawar. From this time and for many centuries the dominant religion in the Panjab was Buddhism, but the religion of the villages may then have been as remote from the State creed as it to-day from orthodox Brahmanism.

Graeco-Bactrian and Graeco-Parthian Rule.—The Panjab slipped from the feeble grasp of Asoka's successors, and for four centuries it looked not to the Ganges, but to the Kabul and the Oxus rivers.

Up to the middle of the first century of our era it was first under Graeco-Bactrian, and later under Graeco-Parthian, rule directly, or indi-

rectly through local rulers with Greek names or Saka Satraps. The Sakas, one the central Asian shepherded hordes, were pushed out of their pastures on the upper Jaxartes by another horde the Yuechi. Shadowy Hellenist Princes have left us only their names on coins; one Menander, who ruled about 150 B.C., is an exception. He anticipated the feats of later rulers of Kabul by a temporary conquest of North-western India, westwards to the Jamna and southwards to the sea.

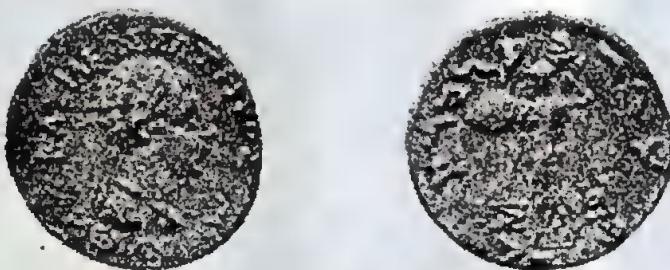


Fig. 56. Coin - obverse and reverse of Menander

The Kushan Dynasty. —The Yuechi in turn were driven southward to the Oxus and the Kabul valley and under the Kushan dynasty established their authority in the Panjab about the middle of the first century. The most famous name is that of Kanishka, who wrested from China Kashgar, Yarkand, and Khotan, and assembled a notable council of sages of the law in Kashmir. His reign may be dated from 120 to 150 A.D. His capital was at Purushapura (Peshawar), near which he built the famous relic tower of Buddha, 400 feet high. Beside the tower was a large monastery still renowned in the ninth and tenth centuries as a home of sacred learning. The rule of Kushan kings in the panjab lasted till the end of the first quarter of the third century. To their time belong the Buddhist sculptures found in the tracts near their Peshawar capital (see also page 204).

The Gupta Empire. —Of the century preceding the establishment in 320 B.C. of the Gupta dynasty at Patna we know nothing. The Panjab probably again fell under the sway of petty rajas and tribal confederacies, though the Kushan rule was maintained in Peshawar till 465 A.D., when it was finally blotted out by the White Huns. These savage invaders soon after defeated Skanda Gupta, and from this blow the Gupta Empire never recovered. At the height of its power in 400 A.D. under Chandra Gupta II, known as Vikramaditya, who is probably the original of the Bikramajit

of Indian legends, it may have reached as far west as the Chenab.

The White Huns of Ephthalites. —In the beginning of the sixth century the White Hun, Mahirakula, ruled the Panjab from Sakala, the modern Sialkot. He was a worshipper of Siva, and a deadly foe of the Buddhist cult, and has been described as a monster of cruelty.

The short-lived dominion of the White Huns was destroyed by the Turks and Persians about the year 565 A.D.

Panjab in seventh century A.D. —From various sources, one of the most valuable being the Memoirs of the Chinese Buddhist pilgrim Hiuen Tsang, who travelled in India from 630 to 644 A.D., we know something of Northern India in the first half of the seventh century. Hiuen Tsang was at Kanauj as a guest of a powerful king named Harsha, whose first capital was at Thanesar, and who held a suzerainty over all the regions from the Brahmaputra to the Bias. West of that river the king of Kashmir was also overlord of Taxila, Urasa, Parnotsa (Puch), Rajapuri (Rajauri) and Sinhapura, which seems to have included the Salt Range. The Peshawar valley was probably ruled by the Turki Shahiya kings of Kabul. The rest of the Panjab was divided between a kingdom called by Hiuen Tsang Tsekha, whose capital was some-where near Sialkot, and the important kingdom of Sindh, in which the Indus valley as far north as the Salt Range was included. Harsha died in 647 A.D. and this empire collapsed.

Kashmir under Hindu Kings. —For the next century China was at the height of its power. It established a suzerainty over Kashmir, Udyana (Swat), Yasin, and Chitral. The first was at this period a powerful Hindu kingdom. Its annals, as recorded in Kallana's Rajatarangini, bear hence-forward a real relation to history. In 733 A.D. King Muktapida Lalitaditya received investiture from the Chinese Emperor. Seven years later he defeated the King of Kanauj on the Ganges. A ruler who carried his arms so far afield must have been very powerful in the Northern Panjab. The remains of the wonderful Martnd temple, which he built in honour of the Sun God, are a standing memorial of his greatness. The history of Kashmir under its Hindu kings for the next 400 years is for the most part that of a wretched people ground down by cruel tyrants. A notable exception was Avantidharman -855-833 A.D. —whose minister, Suyya, car-

ried out very useful drainage and irrigation works.



Fig. 57. Martand Temple

The Panjab, 650-1000 A.D. —We know little of Panjab history in the 340 years which elapsed between the death of Harsha and the beginning of the Indian raids of the Sultans of Ghazni in 986-7 A.D. The conquest of the kingdom of Sindh by the Arab general, Muhammad Kasim, occurred some centuries earlier, in 712 A.D. Multan, the city of the Sun-worshippers, was occupied, and part at least of the Indus valley submitted to the youthful conqueror. He and his successors in Sindh were tolerant rulers. No attempt was made to occupy the Central Panjab, and when the Turkish Sultan, Sabaktagin, made his first raid into India in 986-7 A.D., his opponent was a powerful raja named Jaipal, who ruled over a wide territory extending from the Hakra to the frontier hills on the north-west. His capital was at Bhatinda. Just about the time when the rulers of Ghazni were laying the train which ended at Delhi and made it the seat of a great Muhammadan Empire, that town was being founded in 993-4 A.D. by the Tunwar Rajputs, who then held sway in that neighbourhood.

CHAPTER XVIII

HISTORY (*Continued*). THE MUHAMMADAN PERIOD, 1000-176 A.D

The Ghaznevide Raids. —In the tenth century the Turks were the janissaries of the Abbaside Calips of Baghdad, and ambitious soldiers of that race began to carve out kingdoms. One Alptagin set up for himself at Ghazni, and was succeeded in 976 A.D. by his slave Sabaktagin, who began the long series of Indian raids which stained with blood the annals of the next half century. His son, Mahmud of Ghazni, a ruthless zealot and robber abroad, a patron of learning and literature at home, added the Panjab to his dominions. In the first 26 years of the eleventh century he made seventeen marauding excursions into India. In the first his father's opponent, Jaipal, was beaten in a vain effort to save Peshawar. Ten years later his successor, Anandpal, at the head of a great army, again met the Turks in the Khaibar. The valour of the Ghakkars had practically won the day, when anandpal's elephant took fright, and this accident turned victory into rout. In one of other of the raids Multan and Lahore were occupied, and the temples of Kangra (Nagarkot) and Thanesar plundered. In 1018 the Turkish army marched as far east as Kanauj. The one permanent result of all these devastations was the occupation of the Panjab. The Turks made Lahore the capital.

Decline of Buddhism. —The iconoclastic raids of Mahmud probably gave the *coup de grace* to Buddhism. Its golden age may be put at from 250 B.C. to 200 A.D. Brahmanism gradually emerged from retirement

and reappeared at royal courts. It was quite ready to admit Buddha to its pantheon, and by so doing it sapped the doctrine he had taught. The Chinese pilgrim, Fahien, in the early part of the fifth century could still describe Buddhism in the Panjab as "very flourishing," and he found numerous monasteries. The religion seems however to have largely degenerated into a childish veneration of relics.

Conquest of Delhi. —For a century and a quarter after the death of Mahmud in 1030 A.D. his line maintained its sway over a much diminished empire. In 1155 the Afghan chief of Ghor, Ala ud din, the "World-burner" (Jahan-soz), leveled Ghazni with the ground. For a little longer the Ghaznevide Turkish kings maintained themselves in Lahore. Between 1175 and 1186 Muhammad Ghori, who had set up a new dynasty at Ghazni, conquered Multan, Peshawar, Sialkot, and Lahore, and put an end to the line of Mahmud. The occupation of Sirhind brought into the field Prithvi Raja, the Chauhan Rajput king of Delhi. In 1191 he routed Muhammad Ghori at Naraina near Karnal. But next year the Afghan came back with a huge host, and this time on the same battlefield fortune favoured him. Prithvi Raja was taken and killed, and Muhammad's slave, Kutbuddin Aibak, whom he left to represent him in India, soon occupied Delhi. In 1203 Muhammad Ghori had to flee for his life after a defeat near the Oxus. The Ghakkars seized the chance and occupied Lahore. But the old lion, though wounded, was still formidable. The Ghakkars were beaten, and, it is said, converted. A year or two later they murdered their conqueror in his tent near the Indus.

Turkish and Afghans Sultans of Delhi. —He had no son, and his strong viceroy, Kutbuddin Aibak, became in 1206 the first of the 33 Muhammadan kings, who in five successive dynasties ruled from Delhi a kingdom of varying dimensions, till the last of them fell at Panipat in 1526, and Babar, the first of the Moghals, became master of their red fort palace. The blood-stained annals of these 320 years can only be lightly touched on. Under vigorous rulers like the Turki Salve kings, altamsh (1210-1236) and Balban (1266-1287), a ferocious and masterful boor like Ala ud din Khalji (1296-1316), or a ferocious but able man of culture like Muhammad Tughlak (1325-1351), the local governors at Lahore and

Multan were content to be servants. In the frequent intervals during which the royal authority was in the hands of sottish wastrels, the chance of independence was no doubt seized.

Mongol Invasions. —In 1221 the Mongol cloud rose on the north-west horizon. The cruelty of these camel-riding Tatars and the terror they inspired may perhaps be measured by the appalling picture given of their bestial appearance. In 1221, Chingiz Khan descended on the Indus at the heels of the King of Khwarizm (Khiva), and drove him into Sindh. Then there was a lull for twenty years, after which the Mongol war hordes ruined and ravaged the Panjab for two generations. Two great Panjab governors, Sher Khan under Balban and Tughlak under Ala ud din Khalji, maintained a gallant struggle against these savages. In 1297 and 1303 the Mongols came to the gates of Delhi, but the city did not fall, and soon after they ceased to harry Northern India. During these years the misery of the common people must often have been extreme when foreign raids ceased for a time they were plundered by their own rulers. In the Panjab the fate of the Peasantry must have depended chiefly on the character of the governor for the time being, and of the local feudatories or *zamindars*, who were given the right to collect the State's share of the produce on condition of keeping up bodies of armed men for service when required.

The Invasion of Timur. —The long reign of Muhammad Tughlak's successor, Firoz Shah (1351-1388), son of a Hindu Rajput princess of Dipalpur, brought relief to all classes. Besides adopting a moderate fiscal policy, he founded towns like Hissar and Fatehabad, dug canals from the Jamna and the Sutlej, and carried out many other useful works. On his death the realm fell into confusion. In 1398-99 another appalling calamity fell upon it in the invasion of Timurlang (Tamerlane), Khan of Samarkand. He entered India at the head of 90,000 horsemen, and marched by Multan, Dipalpur, Sirsa, Kaithal, and Panipat to Delhi. What lust of blood was to the Mongols, religious hatred was to Timur and his Turks. Ten thousand Hindus were put to the sword at Bhatner and 100,000 prisoners were massacred before the victory at Delhi. For the three days' sack of the royal city Timur was not personally responsible. Sated with the blood of lakhs of infidels sent "to the fires of Hell" he marched back through

Kangra and Jammu to the Indus. Six years later the House of Tughlak received a deadly wound when the Wazir, Ikbal Khan, fell in battle with Khizr Khan, the governor of Multan.

The later Dynasties. —The Saiyyids, who were in power from 1414 to 1451, only ruled a small territory round Delhi. The local governors and the Hindu chiefs made themselves independent. Sikandar Lodi (1488-1518) reduced them to some form of submission, but his successor, Ibrahim, drove them into opposition by pushing authority further than his power justified. An Afghan noble, Daulat Khan, rebelled in the Panjab. There is always an ear at Kabul listening to the first sounds of discord and weakness between Peshawar and Delhi. Babar, a descendant of Timur, ruled a little kingdom there. In 1519 he advanced as far as Bhera. Five years later his troops burned the Lahore *bazaar*, and sacked Dipalpur. The next winter saw Babar back again, and this time Delhi was his goal. On the 21st of April, 1526, a great battle at Panipat again decided the fate of India, and Babar entered Delhi in triumph.

Akbar and his successors. —He soon bequeathed his Indian kingdom to his son Humayun, who lost it, but recovered it shortly before his death by defeating Sikandar Sur at Sirhind. In 1556 Akbar succeeded at the age of 13, and in the same year Bahram Khan won for his master a great battle at Panipat and seated the Moghals firmly on the throne. For the next century and a half, till their power declined after the death of Aurangzeb in 1707, Kabul and Delhi were under one rule, and the Panjab was held in a strong grasp. When it was disturbed the case was held in a strong grasp. When it was disturbed the cause was rebellions of undutiful sons of the reigning Emperor, struggles between rival heirs on the Emperor's death, or attempts to check the growing power of the Sikh Gurus. The empire was divided into *subahs*, and the area described in this book embraced *subahs* Lahore and Multan, and parts of *subahs* Delhi and Kabul. Kashmir and the trans-Indus tract were included in the last.

The Sultans of Kashmir. —The Hindu rule in Kashmir had broken down by the middle of the twelfth century. A long line of Musalman Sultans followed. Two notable names emerge in the end of the fourteenth and the first half of the fifteenth century, Sikandar, the "Idol-

breaker," who destroyed most of the Hindu temples and converted his people to Islam, and his wise and tolerant successor, Zain-ul-abidin. Akbar conquered Kashmir in 1587.

Moghal Royal Progresses to Kashmir.—His successors often moved from Delhi by Lahore, Bhimbar, and the Pir Panjal route to the Happy Valley in order to escape the summer heats. Bernier has given us a graphic account of Aurangzeb's move to the hills in 1665. On that occasion his total following was estimated to amount to 300,000 or 400,000 persons, and the journey from Delhi to Lahore occupied two months. The burden royal progresses on this scale must have imposed on the country is inconceivable. Jahangir died in his beloved Kashmir. He planted the road from Delhi to Lahore with trees, set up as milestones the *kos minars*, some of which are still standing, and built fine *sarais* at various places.

Prosperity of Lahore under Akbar, Jahangir, and Shahgahan.—The reigns of Akbar and of his son and grandson were the heyday of Lahore. It was the halfway house between Delhi and Kashmir, and between Agra and Kabul. The Moghal Court was often there. Akbar made the city his headquarters from 1584 to 1598. Jahangir was buried and Shahjahan was born at Lahore. The mausoleum of the former is at Shahdara, a mile or two from the city. Shahjahan made the Shalimar garden, and Ali Mardan Khan's canal, the predecessor of our own Upper Bari Doab Canal, was partly designed to water it. Lahore retained its importance under Aurangzeb, till he became enmeshed in the endless Deccan wars, and his successor, Bahadur Shah, died there in 1712.

Baba Nanak, the first Guru.—According to Sikh legend Babar in one of his invasions had among his prisoners their first Guru, Baba Nanak, and tried to make him a Musalman. Nanak was born in 1469 at Talwandi, now known as Nankana Sahib, 30 miles to the south-west of Lahore, and died twelve years after babar's victory at Panipat. He journeyed all over India, and, if legend speaks true, even visited Mecca. His propaganda was a peaceful one. A man of the people himself, he had a message to deliver to a peasantry naturally impatient of the shackles of orthodox Hinduism. Sikhism is the most important of all the later dissents from Brahmanism, which represent revolts against idolatry, priestly domination, and the bond-

age of caste and ritual. These things Nank unhesitatingly condemned, and in the opening lines of his Japji, the morning service which every true Sikh must know by heart, he asserted in sublime language the unity of God.

The Gurus between Nank and Govind. —The first three successors of Nanak led the quiet lives of great eastern saints. They managed to keep on good terms with the Emperor and generally also with his local representatives. The fifth Guru, Arjan (1581-1606), began the welding of the Sikhs into a body fit to play a part in secular politics. He complied their sacred book, known as the *Granth Sahib*, and made Amritsar the permanent centre of their fait. The tenets of these early Gurus chimed in with the liberal sentiments of Akbar, and he treated them kindly. Arjan was accused of helping Khusrū, Jahangir's rebellious son, and is alleged to have died after suffering cruel tortures.

Hitherto there had been little ill-will between monotheistic Sikhs and Muhammadans. Henceforth there was ever-increasing enmity. The peasant converts to the new creed has many scores against Turk officials to pay off, while the new leader Hargovind (1606-1645), had the motive of revenge. He was a Guru of a new type, a lover of horses and hawks, and a man of war. He kept up a bodyguard, and, when danger threatened, armed followers flocked to his standard. The easy-going Jahangir (1605-1627) on the whole treated him well. Shahjahan (1627-1659) was more strict or less prudent, and during his reign there were several collisions between the imperial troops and the Guru's followers. Hargovind was succeeded by his grandson, Har Rai (1645-1661). The new Guru was a man of peace. Har Rai died in 1661, having nominated his younger son, Harkrishn, a child of six, as his successor. His brother, Ram Rai, disputed his claim, but Aurangzeb confirmed Harkrishn's appointment. He died of small pox in 1664 and was succeeded by his uncle, Tag Bahadur (1664-1675), whose chief titles to fame are his execution in 1675, his prophecy of the coming of the English, and the fact that he was the father of the great tenth Guru, Govind. It is said that when in prison at Delhi he gazed southwards one day in the direction of the Emperor's *zanana*. Charged with this impropriety, he replied: "I was looking in the direction of the

Europeans, who are coming to tear down thy *pardas* and destroy thine empire."

Guru Govind Singh.—When Govind (1675-1708) succeeded his father, Aurangzeb had already started on the course of persecution which fatally weakened the pillars of Turkish rule. Govind grew up with a rooted hatred of the Turks, and a determination to weld his followers into a league of fighting men or *Khalsa* (Ar. *Khalis* =pure), admission into which was by the *pahul*, a form of military baptism. Sikhs were henceforth to be *Singhs* (lions). They were forbidden to smoke, and enjoined to wear the five k's, *kes*, *kangha*, *kripan*, *kachh*, and *kara* (uncut hair, comb, sword, short drawers, and steel bracelet). He established himself at Anandpur beyond the Hoshiarpur Siwaliks. Much of his life was spent in struggles with his neighbours, the Rajput Hill Rajas, backed from time to time by detachments of imperial troops from Sirhind. In 1705 two of his sons were killed fighting and two young grandsons were executed at Sirhind. He himself took refuge to the south of the Sutlej, but finally decided to obey a summons from Aurangzeb, and was on the way to the Deccan when the old Emperor died. The Guru took up his residence took up his residence on the banks of the Godavari, and died there in 1708.

Banda.—Before his death he had converted the Hindu ascetic Banda, and sent him forth on a mission of revenge. Banda defeated and slew the governor of Sirhind, Wazir Khan, and sacked the town. Doubtless he dreamed of making himself Guru. But he was really little more than a condottiere, and his orthodoxy was suspect. He was defeated and captured in 1715 at Gurdaspur. Many of his followers were executed and he himself was tortured to death at Delhi, where the members of an English mission saw a ghastly procession of Sikh prisoners with 2000 heads carried on poles. The blow was severe, and for a generation little was heard of the Sikhs.

Invasions of Nadir Shah and Ahmad Shah.—The central power was weak, and a new era of invasions from the west began. Nadir Shah, the Turkman shepherd, who had made himself master of Persia, advanced through the Panjab. Zakaria Khan, the governor of Lahore, submitted and the town was saved from sack. A victory at Karnal left the

road to Delhi open, and in March, 1738, the Persians occupied the capital. A shot fired at Nadir Shah in the Chandni Chauk led to the nine hours' massacre, when the Dariba ran with blood, and 100,000 citizens are said to have perished. The Persians retired laden with booty, including the peacock throne and the Kohinur diamond. The Sikhs harassed detachments of the army on its homeward march. Nadir shah was murdered nine years later, and his power passed to the Afghan leader, the Durani Ahmad Shah.

Between 1748 and 1767 this remarkable man, who could conquer but could not keep, invaded India eight times. Lahore was occupied in 1748, but at Sirhind the skill of Mir Mannu, called Muin ul Mulk, gave the advantage to the Moghals. Ahmad Shah retreated, and Muin ul Mulk was rewarded with the governorship of the Panjab. He was soon forced to cede to the Afghan the revenue of four districts. His failure to fulfil his compact led to a third invasion in 1752, and Muin ul Mulk, after a gallant defence of Lahore, had to submit. In 1755-56 Ahmad Shah plundered Delhi and then retired, leaving his son, Timur, to represent him at Lahore. Meanwhile the Sikhs had been gathering strength. Then, as now, they formed only a fraction of the population. But they were united by a strong hatred of Muhammadan rule, and in the disorganized state of the country even the loose organization described below made them formidable. Owing to the weakness of the government the Panjab became dotted over with forts, built by local chiefs, who undoubtedly lived largely by plunder. The spiritual organization under a Guru being gone, there gradually grew up a political and military organization into twelve *misl*, in which "a number of chiefs agreed, after a somewhat democratic and equal fashion, to fight under the general orders of some powerful leader" against the hated Muhammadans. The *misl* often fought with one another for a change. In the third quarter of the eighteenth century *sardar* Jassa Singh of Kapurthala, head of the Ahluwalia *misl*, was the leading man among the Sikhs. Timur having defiled the tank at Amritsar, Jassa Singh avenged the insult by occupying Lahore in 1756, and the Afghan prince withdrew across the Indus. Adina Beg, the governor of the Jalandhar Doab, called in the Mahrattas, who drove the Sikhs out in 1758. Ahmad Shah's fifth

invasion in 1761 was rendered memorable by his great victory over the Mahratta confederacy at Panipat. When he returned to Kabul, the Sikhs besieged his governor, Zin Khan, in Sirhind. Next year Ahmad Shah returned, and repaid their audacity by a crushing defeat near Barnala.

They soon rallied, and, in 1763, under Jassa Singh Ahluwalia and Raja Ala Singh of Patiala razed Sirhind to the ground. After the sack the Sikh horsemen rode over the plains between Sirhind to the ground. After the sack the Sikh horsemen rode over the plains between Sirhind and Karnal, each man claiming for his own any village into which in passing he had thrown some portion of his garments. This was the origin of the numerous petty chiefships and confederacies of horsemen, which along with the Phulkian States, the British Government took under its protection in 1808. In 1764 the chiefs of the bhangi *misl* occupied Lahore.

CHAPTER XIX

HISTORY (*Continued*). THE SIKH PERIOD, 1764-1749 A.D

Rise of Ranjit Singh. —The Bhangis held Lahore with brief intervals for 25 years. In 1799, Ranjit Singh, basing his claim on a grant from Shah zaman, the grandson of Ahmad Shah, drove them out, and inaugurated the remarkable career which ended with his death in 1839. When he took Lahore the future Maharaja was only nineteen years of age. He was the head of the Sukarchakia *misl*, which had its headquarters at Gujranwala. Mean in appearance, his face marked and one eye closed by the ravages of smallpox, he was the one man of genius the Jat tribe has produced. A splendid horseman, a bold leader, a cool thinker untroubled with scruples, an unerring judge of character, he was bound to rise in such times. He set himself to put down every Sikh rival and to profit by the waning of the Durani power to make himself master of their possessions in the Panjab. Pluck, patience, and guile broke down all opposition among the Manjha Sikhs. The Sikh chiefs to the south of the Sutlej were only saved from the same fate by throwing themselves in 1808 on the protection of the English, who six years earlier had occupied Delhi, and by taking under their protection the blind old Emperor, Shah Alam, had virtually proclaimed themselves the paramount power in India. For 44 years he had been only a piece in the game played by Mahrattas, Rohillas, and the English in alliance with the Nawab Wazir of Oudh.

British supremacy established in India. —In the first years of the nineteenth century the Marquess of Wellesley had made up his mind that the time was ripe to grasp supreme power in India. The motive was largely

self-preservation. India was included in Napoleon's vast plans for the overthrow of England, and Sindhia, with his army trained in European methods of warfare by French officers, seemed a likely confederate. Colonel Arthur Wellesley's hard-won battle at Assaye in September, 1803 and Lord Lake's victories on the Hindan and at Laswari in the same year, decided the fate of India. Delhi was occupied, and Daulat Rao Sindhia ceded to the company territory reaching from Fazilka on the Sutlej to Delhi on the Jamna, and extending along that river northwards to Karnal and southwards to Mewat. Fazilka and a large part of Hissar then formed a wild desert tract called Bhattiana, over which no effective control was exercised till 1818. In 1832 "the Delhi territory" became part of the North-West Provinces, from which it was transferred to the Panjab after the Mutiny.



Fig. 60. Maharaja Ranjit Singh.

(From a picture book said to have been prepared for Maharaja Dalip Singh)

Relations of Ranjit Singh with English. —In December, 1808, Ranjit Singh was warned that by the issue of the war with Sindhia the Cis-Sutlej chiefs had come under British protection. The Maharaja was within an ace of declaring war, or let the world think so, but his statesmanlike instincts got the better of mortified ambition, and in April, 1809, he signed a treaty pledging himself to make no conquests south and east of the

Sutlej. The compact so reluctantly made was faithfully observed. In 1815, as the result of war with the Gurkhas, the Rajput hill states lying to the south of the Sutlej came under British protection.

Extension of Sikh Kingdom in Panjab. —As early as 1806, when he reduced Jhang, Ranjit Singh began his encroachments on the possessions of the Duranis in the Panjab. Next year, and again in 1810 and 1816, Multan was attacked, but the strong fort was not taken till 1818, when the old Nawab, Muzaffar Khan, and five of his sons, fell fighting at the gate. Kashmir was first attacked in 1811 and finally annexed in 1819. Called in by the great Katoch Raja of Kangra, Sansar Chand, in 1809, to help him against the Gurkhas, Ranjit Singh duped both parties, and became master of the famous fort. Many years later he annexed the whole of the Kangra hill states. By 1820 the Maharaja was supreme from the Sutlej to the Indus, though his hold on Hazara was weak. Peshawar became tributary in 1823, but it was kept in subjection with much difficulty. Across the Indus the position of the Sikhs was always precarious, and revenue was only paid when an armed force could be sent to collect it. As late as 1837 the great Sikh leader, Hari Singh Nalwa, fell fighting with the Afghans at Jamrud. The Barakzai, Dost Muhammad, had been the ruler of Kabul since 1826. In 1838, when the English launched their ill-starred expedition to restore Shah Shuja to his throne, Ranjit Singh did not refuse his help in the passage through the Panjab. But he was worn out by toils and excesses, and next year the weary lion of the Panjab died. He had known how to use men. He employed Jat blades and Brahman and Muhammadan brains. Khatri's put both at his service. The best of his local governors was Diwn Sawan Mal, who ruled the South-West Panjab with much profit to himself and to the people. After 1820 the three Jammu brothers, Rajas Dhian Singh, Suchet Singh, and Gulab Singh, had great power.

Successors of Ranjit Singh. —From 1839 till 1846 an orgy of bloodshed and intrigue went on in Lahore. Kharak Singh, the Maharaja's son, died in 1840, and on the same day occurred the death of his son Nao Nihal Singh, compassed probably by the Jammu Rajas. Sher Singh, and then the child, Dalip Singh, succeeded. In September, 1843, Maharaja

Sher Singh, his son Partab Singh, and Raja Dhian Singh were shot by Ajit Singh and Lehna Singh of the great Sindhanwalia house. The death of Dhian Singh was avenged by his son, Hira Singh, who proclaimed Dalip Singh as Maharaja and made himself chief minister. When he in turn was killed Rani Jindan, the mother of Dalip Singh, her brother Jowahir Singh, and her favourite, Lal Singh, took the reins.

The First Sikh War and its results. —in 1845 these intriguers, fearing the *Khalsa* army which they could not control, yielded to its cry to be led across the Sutlej in the hope that its strength would be broken in its conflict with the Company's forces. The valour displayed by the Sikh soldiery on the fields of Mudki, Ferozeshah (Pherushahr), and Sobraon was rendered useless by the treachery of its rulers, and Lahore was occupied in February, 1846. By the treaty signed on 9th March, 1846, the Maharaja ceded the territories in the plains between the Sutlej and Bias, and in the hills between the Bias and the Indus. Kashmir and Hazara were made over by the Company of Raja Gulab Singh for a payment of 75 lakhs, but next year he induced the Lahore Darbar to take over Hazara and give him Jammu in exchange. After Raja Lal Singh had been banished for instigating Shekh Imam-ud-din to resist the occupation of Kashmir by Gulab Singh, an agreement was executed, in December, 1846, between the Government and the chief Sikh *Sardars* by which a Council of Regency was appointed to be controlled by a British Resident at Lahore. The office was given to Henry Lawrence.

The Second Sikh War. —These arrangements were destined to be short-lived. Diwan Sawan Mal's son, Mulraj, mismanaged Multan and was ordered to resign. In April, 1848, two English officers sent to install his Sikh successor were murdered. Herbert Edwardes, with the help of Muhammadan tribesmen and Bahawalpur troops, shut up Mulraj in Multan, but the fort was too strong for the first British regular force, which arrived in August, and it did not fall till January, 1849. During that winter a formidable Sikh revolt against English domination broke out. Its leader was *Sardar* Chatar Singh, Governor of Hazara. The troops sent by the *Darbar* to Multan under Chatar Singh's son, Sher Singh, marched northwards in September to join their co-religionists.



Fig. 64. Zamzama Gun.

On the 13th of January, 1849, Lord Gough fought a very hardly contested battle at Chillianwala. If this was but a doubtful victory, that won six weeks later at Gujrat was decisive. On 12th March, 1849, the soldiers of the *Khalsa* in proud dejection laid down their weapons at the feet of the victor, and dispersed to their homes.

Annexation. —The cause they represented was in no sense a national one. The Sikhs were a small minority of the population, the bulk of the people being Muhammadans, to whom the English came as deliverers. On the 30th of March, 1849, the proclamation annexing the Panjab was read at Lahore.

*This gun, known to the readers of *kim*, stands on the Lahore Mall. Whoever possesses it is supposed to be ruler of the Panjab.

CHAPTER XX

HISTORY (*continued*). THE BRITISH PERIOD, 1849-1913

Administrative Arrangements in Panjab.—Lord Dalhousie put the government of the province under a Board of Administration consisting of the two Lawrences, Henry and John, and Charles Mansel. The Board was abolished in 1853 and its powers vested in a Chief Commissioner. A Revenue or Financial Commissioner and a Judicial Commissioner were his principal subordinates. John Lawrence, the first and only Chief Commissioner of the Panjab, became its first Lieutenant-Governor on the 1st of January, 1859. The raising of the Panjab to the full rank of an Indian province was the fitting reward of the great part which its people and its officers, with their cool-headed and determined chief, had played in the suppression of the Mutiny. The overthrow of the *Khalsa* left the contending parties with the respect which strong men feel for each other; the services of the Sikhs in 1857 healed their wounded pride and removed all soreness.

Administration, 1849-1859.—When John Lawrence laid down his office in the end of February, 1859, ten years of work by himself and the able officers drafted by Lord Dalhousie into the new province had established order on a solid foundation. A strong administration suited to a manly and headstrong people had been organised. In the greater part of the province rights in land had been determined and recorded. The principle of a moderate assessment of the land revenue had been laid down

and partially carried out in practice. The policy of canal and railway development, which was to have so great a future in the Panjab, had been definitely started. The province had been divided into nine divisions containing 33 districts. The Divisional Commissioners were superintendents of revenue and police with power to try the gravest criminal offences and to hear appeals in civil cases. The Deputy Commissioner of districts had large civil, criminal, and fiscal powers. A simple criminal and civil code was enforced. The peace of the frontier was secured by a chain of fortified outposts watching the outlets from the hills, behind which were the cantonments at the headquarters of the districts linked together by a military road. The posts and the cantonments except Peshawar were garrisoned by the Frontier Force, a splendid body of troops consisting ultimately of seven infantry and five cavalry regiments, with some mule batteries. This force was till 1885 subject to the orders of the Lieutenant Governor.

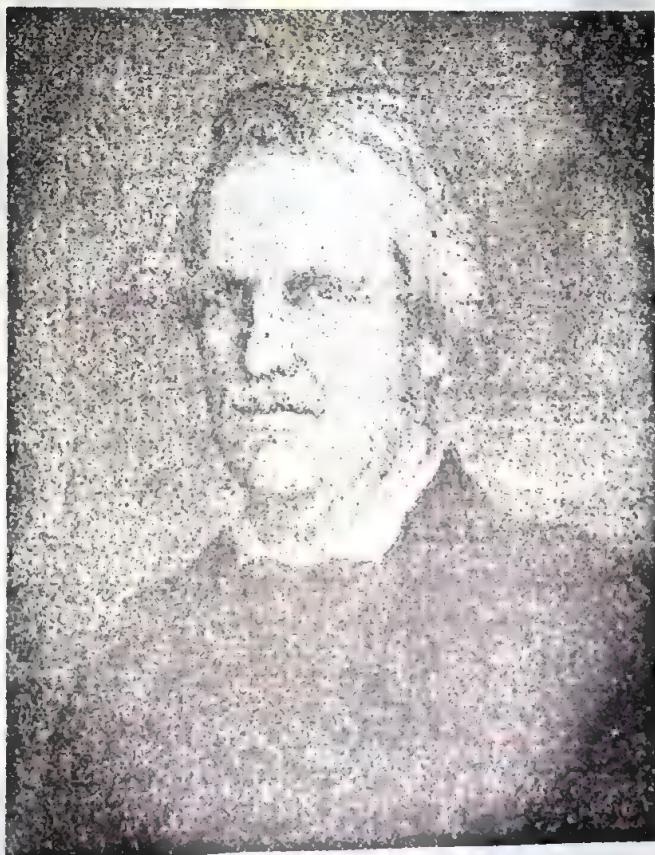


Fig. 65. Sir John Lawrence.

It never wanted work, for before the Mutiny troops had to be employed

seventeen times against the independent tribesmen. East of the Indus order was secured by the disarmament of the people, the maintenance, in addition to civil police, of a strong body of military police, and the construction of good roads. Just before Lawrence left the construction of the Amritsar-Multan railway was begun, and a few weeks after his departure the Upper Bari Doab Canal was opened.



Fig. 66. John Nicolson's Monument at Delhi

Administration, 1859-1870. —The next eleven years occupied by the administrations of Sir Robert Montgomery and Sir Donald Macleod were a quiet time in which results already achieved were consolidated. The Penal Code was extended to the Panjab in 1862, and a Chief Court with a modest establishment of two judges in 1865 took the place of the Judicial Commissioner. In the same year a Settlement Commissioner was appointed to help the Financial Commissioner in the control of land revenue settlements. Two severe famines marked the beginning and the close of this period. Omitting the usual little frontier excitements, it is necessary to mention the troublesome Ambala campaign in 1863 in the country north of Peshawar, which had for its object the breaking up of the power of a nest of Hindustani fanatics, and the Black Mountain expedition, in 1868, on the Hazara border, in which no fewer than 15,000

men were employed. Sir Henry Durand, who succeeded Sir Donald Macleod, after seven months of office lost his life by an accident in the beginning of 1871.



Fig. 67. Sir Robert Montgomery

Administration, 1871-1882.—The next eleven years divided between the administrations of Sir Henry Davies (1871-1877) and Sir Robert Egerton (1877-1882) produced more striking events. In 1872 a small body of fanatics belonging to a Sikh sect known as Kukas or Shouters marched from the Ludhiana district and attacked the headquarters of the little Muhammadan State of Malerkotla. They were repulsed and 68 men surrendered to the Patiala authorities. The Deputy Commissioner of Ludhiana blew 49 of them from the guns, and the rest were executed after summary trial by the Commissioner. Such strong measures were not approved by the Government, but it must be remembered that these madmen had killed ten and wounded seventeen men, and that their lives were justly forfeit. On the 1st of January, 1877, Queen Victoria assumption of the title of Empress of India (*Kaisar-i-Hind*) was announced at a great *Darbar* at Delhi. In 1877 Kashmir, hitherto controlled by the Lieutenant-Governor, was put directly under the Government of India. The same year and the next the province was tried by famine, and in 1878-80 it was

the base from which our armies marched on Kabul and Kandahar, while its resources in camels were strained to supply transport. Apart from this its interest in the war was very great because it is the chief recruiting ground of the Indian army and its chiefs sent contingents to help their suzerain. The first stage of the war was closed by the treaty of Gandamak in May, 1879, by which Yakub Khan surrendered any rights he possessed over the Khaibar and the Kurram as far as Shutargardan.

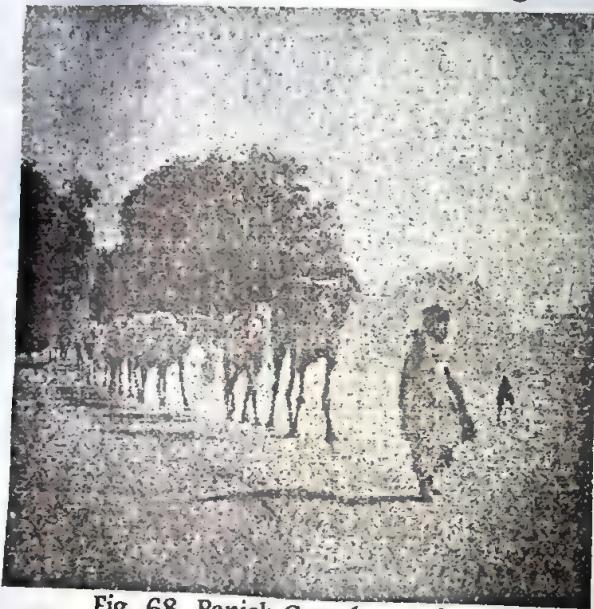


Fig. 68. Panjab Camels - Lahore

Administration, 1882-1892.—During the Lieutenant-Governorships of Sir Charles Aitchison (1882-1887) and Sir James Lyall (1887-1892) there was little trouble on the western frontier. In 1891 the need had arisen of making our power felt up to the Pamirs. The setting up of a British agency at Gilgit was opposed in 1891 by the fighting men of Hunza and Nagar. Colonel Durand advanced rapidly with a small force and when a determined assault reduced the strong fort of Nilt, trouble was at an end once and for all. Within the Panjab the period was one of quiet development. The Sirhind Canal was opened in 1882, and the weir at Khanki for the supply of the Lower Chenab Canal was finished in 1892. New railways were constructed. Lord Ripon's policy of Local Self-government found a strong supporter in Sir Charles Aitchison, and Acts were passed dealing with the constitution and powers of municipal committees and district boards. In 1884 and 1885 a large measure of reorga-

nization was carried out. A separate staff of divisional, district, and subordinate civil judges was appointed. The divisional judges were also sessions judges. The ten commissioners were reduced to six, and five of them were relieved of all criminal work by the sessions judges. The Deputy Commissioner henceforth was a Revenue Collector and District Magistrate with large powers in criminal cases. The revenue administration was at the same time being improved by the reforms embodied in the Panjab Land revenue and Tenancy Acts passed at the beginning of Sir James Lyall's administration.



Fig. 69. Sir Charles Aitchison

Administration, 1892-1902. —The next two administrations, those of Sir Dennis Fitzpatrick (1892-97) and Sir Mackworth Young (1897-1902) were crowded with important events. Throughout the period the colonization of the vast area of waste commanded by the Lower Chenab Canal was carried out, and the Lower Jhelam Canal was formally opened six months before Sir Mackworth Young left. The province suffered from famine in 1869-97 and again in 1899-1900. In October, 1897, a worse enemy appeared in the shape of plague, but its ravages were not very formidable till the end of the period. The Panjab was given a small nomi-

nated Legislative Council in 1897, which speedily proved itself a valuable instrument for dealing with much-needed provincial legislation. But the most important Panjab Act of the period, XIII of 1900, dealing with Land Alienation was passed by the Viceroy's Legislative Council. In 1901 a Political Agent was appointed as the intermediary between the Panjab Government and the Phulkian States. On the frontier the conclusion of the Durand Agreement in 1893 might well have raised hopes of quiet times. But the reality was otherwise. The establishment of a British officer at Wana to exercise control over Southern Waziristan in 1894 was forcibly resisted by the Mahsud Wazirs, and an expedition had to be sent into their country. The Mehtar or Chief of Chitral, who was in receipt of a subsidy from the British Government, died in 1892. A period of great confusion followed fomented by the ambitions of Umra Khan of Jandol. Finally we recognized as Mehtar the eldest son, who had come uppermost in the struggle, and sent an English officer as British Agent to Chitral. Umra Khan got our protégé murdered, and besieged the Agent in the Chitral fort. He withdrew however on the approach of a small force from Gilgit. Shuja-ul-Mulk was recognized as Mehtar. This little trouble occurred in 1895. Two years later a storm-cloud suddenly burst over the frontier, such as we had never before experienced. It spread rapidly from the Tochi to Swat, tribe after tribe rising and attacking our posts. It is impossible to tell here the story of the military measures taken against the different offending tribes. The most important was the campaign in Tirah against the Orakzais and Afridis, in which 30,000 men were engaged for six months. In 1900 attacks on the peace of the border by the Mahsud Wazirs had to be punished by blockade, and in the cold weather of 1901-2 small columns harried the hill country to enforce their submission. By this time the connection of the Panjab Government with frontier affairs, which had gradually come to involve responsibility with little real power, had ceased. On the 25th of October, 1901, the North-West Frontier Province was constituted and Colonel (afterwards Sir Harold) Deane became its first Chief Commissioner, an office which he held till 1908, when he was succeeded by Major (now Sir George) Roos Keppel.



Fig. 70. Sir Denzil Ibbetson

Administration, 1902-1913. —The last eleven years have embraced the Lieutenant Governorship of Sir Charles Rivaz (1902-1907), the too brief administration of Sir Denzil Ibbetson (1907-1908), and that of Sir Louis Dane (1908-1913). Throughout the period plague has been a disturbing factor, preventing entirely the growth of population which the rapid development of the agricultural resources of the province would otherwise have secured. It was among the causes stimulating the unrest which came to a head in 1907. A terrible earthquake occurred in 1905. Its centre was in Kangra, where 20,000 persons perished under the ruins of their houses. The colonization of the Crown waste on the Lower Jhelam Canal was nearly finished during Sir Charles Rivaz's administration. Before he left the Triple Canal Project, now approaching completion, had been undertaken. Other measures of importance to the rural population were the passing of the Co-operative Credit societies' Act in 1903, and the organization in 1905 of a provincial Agricultural Department. The seditious movement which troubled Bengal had its echo in some parts of

the Panjab in the end of 1906 and the spring of 1907. A bill dealing with the rights and obligations of the Crown tenants in the new Canal Colonies was at the time before the Local Legislature. Excitement fomented from outside spread among the prosperous colonists on the Lower Chenab Canal. There was a disturbance in Lahore in connection with the trial of a newspaper editor, the ringleaders being students. When Sir Denzil Ibbetson took the reins into his strong hands in March, 1907, the position was somewhat critical. The disturbance at Lahore was followed by a riot at Rawalpindi. The two leading agitators were deported, a measure which was amply justified by their reckless actions and which had an immediate effect. Lord Minto decided to withhold his assent from the Colony Bill, and it has recently been replaced by a measure which has met with general acceptance. When Sir Denzil Ibbetson took office he was already suffering from a mortal disease. In the following January he gave up the unequal struggle, and shortly afterwards died. Sir Louis Dane became Lieutenant Governor in May, 1908. A striking feature of his administration was the growth of co-operative credit societies or village banks. At the Coronation *Darbar* on 12th December, 1911, the King-Emperor announced the transfer of the capital of India to Delhi. As a necessary consequence the city and its suburbs were severed from the province, with which they had been connected for 55 years. In 1913 Sir Louis Dane was succeeded by Sir Michael O'Dwyer.

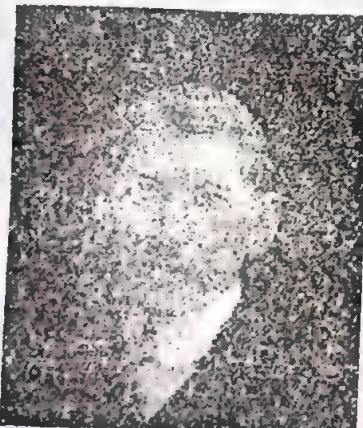


Fig. 71. Sir Michael O'Dwyer

CHAPTER XXI

ARCHAEOLOGY AND COINS

Hindu and Buddhist Remains. —The scholar who ended his study of Indian history with the close of the first millennium of the Christian era would expect to find a fruitful field for the study of ancient monuments of the Hindu faith in the plains of the Panjab. He would look for a great temple of the Sun God at Multan, and at places like Lahore and Kangra, Thanesar and Pihowa, for shrines rich with graven work outside sand with treasures of gold and precious stones within. But he would look in vain. The Muhammadan invaders of the five centuries which elapsed between Mahmud of Ghazni and the Moghal Babar were above all things idol-breakers, and their path was marked by the destruction and spoliation of temples. Even those invaders who remained as conquerors deemed it a pious work to build their mosques with the stones of ruined fanes. The transformation, as in the case of the great Kuwwat ul Islam mosque beside the Kutb Minar, did not always involve the complete obliteration of idolatrous emblems. Kangra was not too remote to be reached by invading armies, and the visitor to Nurpur on the road from Pathankot to Dharamsala can realize how magnificent some of the old Hindu buildings were, and how magnificent some of the old Hindu buildings were, and how utterly they were destroyed. The smaller buildings to be found in the remoter parts of the hills escaped, and there are characteristic groups of stone temples at Chamba and still older shrines dating from the eighth century of Barmaur and Chitradi in the same state. The ruins of the great temple of the Sun, built by Lalitaditya in the same period, at Martand near Islamabad in the Kashmir State are very striking. The smaller, but far better preserved, temple at Payer is probably of much later date. Round

the pool of *Katas*, one of Siva's eyes, a great place of Hindu pilgrimage in the Salt Range, there is little or nothing of antiquarian value, but there are interesting remains at Malot in the same neighbourhood. It is possible that when the mounds that mark the sites of ancient villages come to be excavated valuable relics of the Hindu period will be brought to light. The forces of nature or the violence of man have wiped out all traces of the numerous Buddhist monasteries which the Chinese pilgrims found in the Panjab.



Fig. 72. Group of Chamba Temples

Inscriptions of Asoka graven on rocks survive at Shahbazgarhi and Mansehra in the North-West Frontier Province. Two pillars with inscriptions of the Missionary Emperor stand at Delhi. They were brought from Topra near the Jamna in Ambala and from Meerut by Firoz Shah.



Fig. 73. Payer Temple.

The traveller by train from Jhelam to Rawalpindi can see to the west of the line at Mankiala a great *stupa* raised to celebrate the self-sacrifice of the Bodhisattva who gave his life to feed a starving tigress. There is a ruined *stupa* at Sui Vihar in the Bahawalpur State. The Chinese pilgrims described the largest of Indian *stupas* built by Kanishka near Peshawar to enshrine precious reliques of Gautama Buddha and a great monastery beside it. Recent excavations have proved the truth of the conjecture that the two mounds at Shahji ki dheri covered the remains of these buildings, and the six-sided crystal reliquary containing three small fragments of bone has after long centuries been disinterred and is now in the great pagoda at Rangoon. In the Lahore museum there is a rich collection of the sculptures recovered from the Peshawar Valley, the ancient Gandhara. They exhibit strong traces of Greek influence. The best age of Gandhara sculpture was probably over before the reign of Kanishka. The site of the famous town of Taxila is now a protected area, and excavation there may yield a rich reward.



Fig. 75. Colonnade in Kuwwat ul Islam Mosque

Muhammadan Architecture. —The Muhammadan architecture of North-Western India may be divided into three periods:

(a)	The Pathan	..	1191-1320
(b)	The Tughlak	..	1320-1556
(c)	The Moghal	..	1556-1753

In the Pathan period the royal builders drew their inspiration from Ghazni, but their work was also much affected by Hindu influences for two reasons. They used the materials of Hindu temples in constructing their mosques and they employed masons imbued with the traditions of Hindu art. The best specimens of this period are to be found in the group of buildings in Old Delhi or *Kila' Rai Pithora*, close to Mahrauli and eleven miles to the south of the present city. These buildings are the magnificent *Kuwwat ul Islam* (Might of Islam) Mosque (1191-1225), with its splendid tower, the *Kutb Minar* (1200-1220), from which the *mu'azzin* called the faithful to prayer, the tomb of the Emperor Altamsh (1238), and the great gateway built in 1310 by ala ud din Khyalji. In the second period, named after the house that occupied the imperial throne when it began, all traces of Hindu influence have vanished, and the buildings display the austere and massive grandeur suited to the faith of the desert prophet unalloyed by foreign elements. This style in its beginning is best seen in the cyclopean ruins of Tughlakabad and the tomb of the Emperor Tughlak Shah, and in some mosques in and near Delhi. Its latest phase is represented by Sher Shah's mosque in the Old Fort of *Purana Kila'*. To some the simple grandeur of this style will appeal more strongly than the splendid, but at times almost effeminate, beauty of the third period.

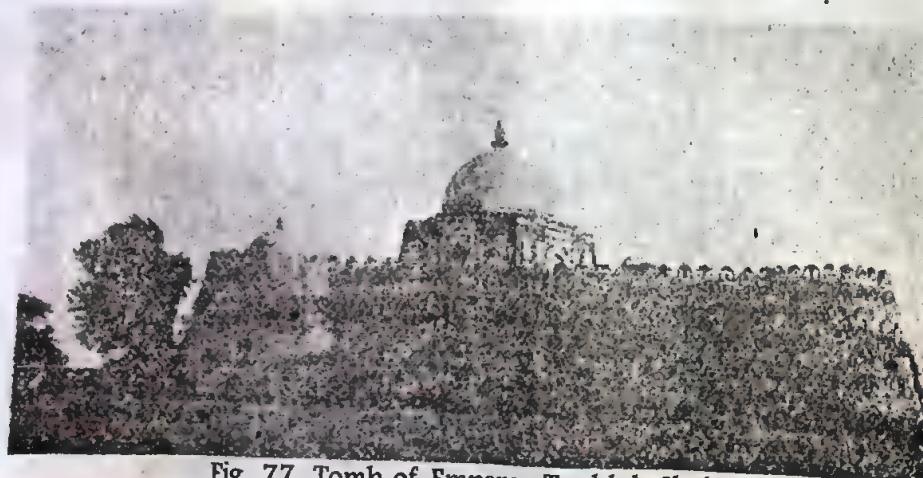


Fig. 77. Tomb of Emperor Tughlak Shah.

Noted examples of Moghal architecture in the Panjab are to be found in Shahjahan's red fort place and *Jama' Masjid* at New Delhi or Shahjahanabad, Humayun's tomb on the road from Delhi to Mahrauli, the fort palace, the

Badshahi and Wazir Khan's mosques, at Lahore, and Jahangir's mausoleum at Shahdara. A very late building in this style is the tomb of Nawab Safdar Jang (1753) near Delhi. A further account of some of the most famous Muhammadan buildings will be found in the paragraphs devoted to the chief cities of the province. The architecture of the British period scarcely deserves notice.

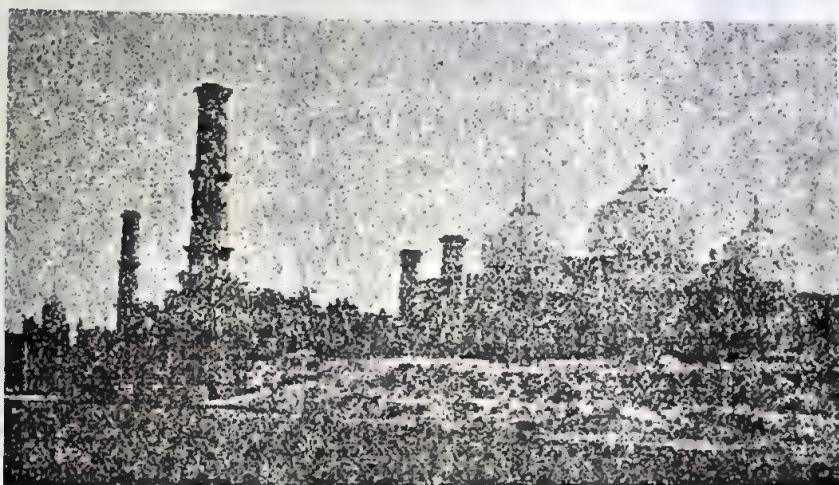


Fig. 80. Badshahi Mosque, Lahore

Coins. —Among the most interesting of the archaeological remains are the coins which are found in great abundance on the frontier and all over the Panjab. These take us back through the centuries to times before the invasion of India by Alexander, and for the obscure period intervening between Greek occupation of the Frontier and the Muhammadan conquest, they are our main source of history. The most ancient of the Indian monetary issues are the so-called punch-marked coins, some of which were undoubtedly in existence before the Greek invasion. Alexander himself left no permanent traces of his progress through the Panjab and Sindh, but about the year 200 B.C., Greeks from Bactria, an outlying province of the Seleukidan Empire, once more appeared on the Indian Frontier, which they effectively occupied for more than a century. They struck the well-known Graeco-Bactrian coins; the most famous of the Indo-Greek princes were Apollodotos and Menander. Towards the close of this dynasty, parts of Sindh and Afghanistan were conquered by Saka Scythians from Central Asia. They struck what are termed the Indo-Scythian and Indo-Parthian coins bearing names in legible Greek leg-

ends-Manes, Azes, Azilises, Gondophares, Abdagases. Both Greeks and Sakas were overthrown by the Kushans. The extensive gold and copper Kushan currency, with inscriptions in the Greek script, contains the names of Kadphises, Kanishka, Huvishka, and others. In addition to the coins of these foreign dynasties, there are the purely Indian currencies, e.g. the coins of Taxila, and those bearing the names of such tribes as the Odumbaras, Kunindas, and Yaudheyas. The White Huns overthrew the Kushan Empire in the fifth century. After their own fall in the sixth century, there are more and more debased types of coinage such as the ubiquitous *Gadhiya paisa*, a degraded Sassanian type. In the ninth century we again meet with coins bearing distinct names, the "bull and horseman" currency of the Hindu kings of Kabul. We have now reached the beginning of the Muhammadan rule in India. Muhammad bin Sam was the founder of the first Pathan dynasty of Delhi, and was succeeded by a long line of Sultans. The pathan and Moghal coins bear Arabic and Persian legends. There were mints at Lahore, Multan, Hafizabad, Kalanaur, Derajat, Peshawar, Srinagar and Jammu. An issue of coins peculiar to the Panjab is that of the Sikhs. Their coin legends, partly Panjabi, are written in the Persian and Gurmukhi scripts. Amongst Sikh mints were Amritsar, Lahore, Multan, Dera, Anandgarh, Jhang, and Kashmir.

CHAPTER XXII

ADMINISTRATION -GENERAL

Panjab Districts. —The administrative unit in the Panjab is the district in charge of a Deputy Commissioner. The districts are divided into *tahsils*, each on the average containing four, and are grouped together in divisions managed by Commissioner. There are 28 districts and five divisions. An ordinary Panjab district has an area of 2000 to 3000 square miles and contains from 1000 to 2000 village estates. Devon, the third in size of the English counties, is about equal to an average Panjab district.

Branches of Administration. —The provincial governments of India are organized in three branches, Executive, Judicial, and Revenue, and a number of special departments, such as Forests and Irrigation. Under "Judicial" there are two subdivisions, civil and criminal. The tendency at first is for powers in all three branches to be concentrated in the hands of single individuals, development tends to specialization, but it is a matter of controversy how far the separation of executive and magisterial functions can be carried without jeopardy to the common weal.

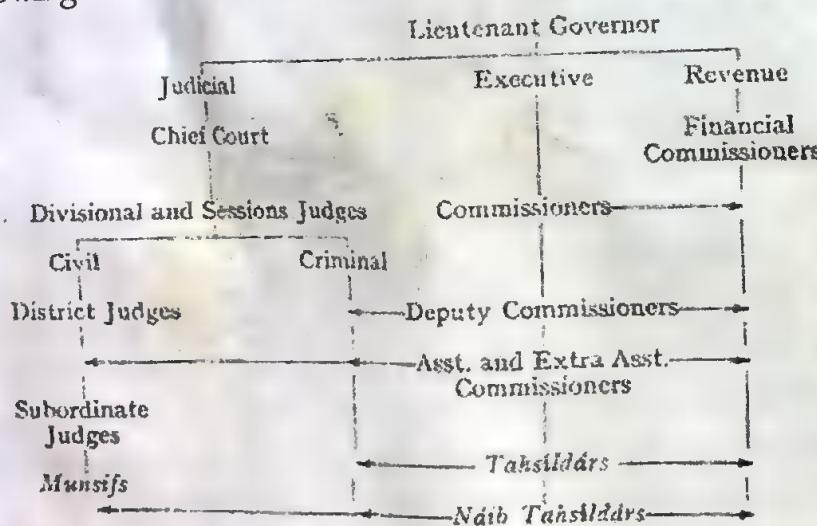
The Lieutenant Governor. —At the head of the whole administration is the Lieutenant Governor, who holds office for five years. He has a strong Secretariat to help in the dispatch of business. The experiment of governing the Panjab by a Board was speedily given up, and for sixty years it has enjoyed the advantage of one man government, the Lieutenant Governor controlling all subordinate authorities and being himself only controlled by the Governor General in Council. The independence of the Courts in the exercise of judicial functions is of course safeguarded.

Official hierarchy. —The following is list of the official hierarchy in

the different branches of the administration:

- A. Lieutenant Governor.
- B. Five Judges of Chief Court (j).
- C. Two Financial Commissioners (r).
- D. Five Commissioners, (e) and (r).
- E. Sixteen Divisional and Sessions Judges (j).
- F. Deputy Commissioners, (e), (r) and (crim).
- G. District Judges (civ).
- H. Subordinate Judges (civ).
- I. Assistant and Extra Assistant Commissioners, (e), (j) and (r).
- J. Tahsildars (e), (r) and (crim).
- K. Munsifs (civ).
- L. Naib-Tahsildars, (e) (r) and (j).

The letters in brackets indicate the classes of functions which the official concerned usually exercises. Translated into a diagram we have the following:



Tahsildars and Assistant and Extra Assistant Commissioners.

Thus the chain of executive authority runs down to the *tahsildar's* assistant or *naib* through the commissioner and the Deputy Commissioner, the *tahsildar* being directly responsible to the latter. The Assistant and Extra Assistant Commissioner are the Deputy Commissioner's Assistants at headquarters, and as such are invested with powers in all branches. The *tahsildar*, a very important functionary, is in charge of a *tahsil*. He is linked on to the village estates by a double chain, one official consisting of the

kannungos and the *patwaris* or village accountants whom they supervise, the other non-official consisting of the village headmen and the *zaildars*, each of whom is the intermediary between the revenue and police staffs and the villages.

Sub-divisional Officers. —In some heavy districts one or more *tahsils* are formed into a subdivision and put in charge of a resident Assistant or Extra Assistant Commissioner, exercising such independent authority as the Deputy Commissioner thinks fit to entrust to him.

The Deputy Commissioner and his Assistants. —As the officer responsible for the maintenance of order the Deputy Commissioner is District Magistrate and has large powers both for the prevention and punishment of crime. The District Superintendent is his Assistant in police matters. The Civil Surgeon is also under his control, and he has an Indian District Inspector of Schools to assist him in educational business. The Deputy Commissioner is subject to the control of the Divisional Commissioner.

Financial Commissioners. —In all matters connected with land, excise, and income tax administration the Commissioner and Deputy Commissioner are subject to the control of the Financial Commissioners, who are also the final appellate authority in revenue cases. As chief district revenue officer the Deputy Commissioner's proper title is "Collector," a term which indicates his responsibility for the realization of all Government revenues. In districts which are canal irrigated the amount is in some cases very large.

Settlement Officers, etc. —With the periodical revisions of the land revenue assessment the Deputy Commissioner has no direct concern. That very responsible duty is done by a special staff of Settlement Officers, selected chiefly from among the Assistant Commissioners and working under the Commissioners and Financial Commissioners. The Director of Land Records, the Registrar of Co-operative Credit Societies, and in some branches of his work the Director of Agriculture and Industries, are controlled by the Financial Commissioners.

The Chief Court. —It must be admitted that Panjabis are very litigious and that in some tracts they are extremely vindictive and reckless of

human life. The volume of litigation is swollen by the fact that the country is *one of* small-holders subject as regards inheritance and other matters ~~to~~ to an uncodified customary law, which may vary from tribe to tribe and tract to tract. A suit is to the Panjabi a rubber, the last game of which he will play in Lahore, if the law permits. It is not therefore extraordinary that the Chief Court constituted in 1865 with two judges has now five, and that even this number has in the past proved insufficient. In the same way the cadre of divisional and sessions judges had in 1909 to be raised from 13 to 16.

Administration of N.W.F. Province. —In the N.W.F. Province no Commissioner is interposed between the district officers and the Chief Commissioner, under whom the Revenue Commissioner and the Judicial Commissioner occupy pretty much the position of the Financial Commissioners and the Chief Court in the Panjab.

Departments. —The principal departments are the Railway, Post Office, Telegraphs, and Accounts, under the Government of India, and Irrigation, Roads and Buildings, Forests, Police, Medical, and Education, under the Lieutenant Governor. In matters affecting the rural population, as a great part of the business of the Forest Department must do, the Conservator of Forests is subject to the control of the Financial Commissioners, whose relations with the Irrigation Department are also very intimate.

Legislative Council. —From 1897 to 1909 the Panjab had a local Legislative Council of nine nominated members, which passed a number of useful Acts. Under 9 Edward VII, cap. 4, an enlarged council with increased powers has been constituted. It consists of 24 members of whom eight are elected, one by the University, one by the Chamber of Commerce, three by groups of Municipal and cantonment committees, and three by groups of district boards. The other sixteen members are nominated by the Lieutenant Governor, and at least six of them must be persons not in Government service. The right of interpellation has been given, and also some share in shaping the financial arrangements embodied in the annual budget.

CHAPTER XXIII

ADMINISTRATION-LOCAL

Municipalities.—It is matter for reflection that, while the effect of British administration has been to weaken self-government in villages, half a century of effort has failed to make it a living thing in towns and districts. The machinery exists, but outside a few towns the result is poor. The attempt was made on too large a scale, municipal institutions being bestowed on places which were no more than villages with a *bazaar*. A new official entity, the "notified area," has been invented to suit the requirements of such places. While there were in 1904 139 municipalities and 48 notified areas, in 1911-12 the figures were 107 and 104 respectively. Even in the latter year 32 of the municipalities had incomes not exceeding £1000 (Rs. 15,000). The total income of the 104 towns was Rs. 71,41,000 (£476,000), of which Rs. 44,90,000 (£300,000) were derived from taxation. Nearly 90 p.c. of the taxation was drawn from octroi, a hardy plant which has survived much economic criticism. The expenditure was Rs. 69,09,000 (£461,000), of which Rs. 40,32,000 (£269,000) fall under the head of "Public Health and Convenience." The incidence of taxation was Rs. 2.6 or a little over three shillings a head.

District Boards.—The district boards can at present in practice only be treated as consultative bodies, and well handled can in that capacity play a useful role. Their income is mainly derived from the local rate, a surcharge of one-twelfth on the land revenue. In 1911-12 the income was Rs. 53,74,000 (£358,000) and the expenditure Rs. 54,44,500 (£363,000). The local rate contributed 51 p.c. and contributions from Government 23 p.c. of the former figure. Public works took up 41 and Education

about 20 p.c. of the expenditure.

Elections.—Some of the seats in most of the municipalities and boards are filled by election when any one can be induced to vote. Public spirit is lacking and, as a rule, except when party or sectarian spirit is rampant, the franchise is regarded with indifference.

CHAPTER XXIV

REVENUE AND EXPENDITURE

Financial Relations with Government of India.—Local governments exercise their financial powers in strict subordination to the Government of India, which alone can borrow, and which requires the submission for its sanction of the annual provincial budgets. To ensure a reasonable amount of decentralization the Supreme Government has made financial contracts with the provinces under which they receive definite shares of the receipts, and are responsible for definite shares of the expenditure, under particular heads. The existing contract dates only from 1911-12 (see Table V).

Income and Expenditure.—Excluding income from railways, post offices, telegraphs, salt, and sales of excise opium, which are wholly imperial, the revenue of the Panjab in 1911-12 was £5,057,000 (Rs. 758,56,000), of which the provincial share was £2,662,200 (Rs. 399,33,000), to which have to be added £251,800 (Rs. 37,77,000) on account of assignments made by the Government of India to the province. This brought up the total to £2,914,000 (Rs. 437,10,000). The expenditure was £2,691,933 (Rs. 403,79,000). This does not include £983,000 spent from loan funds on irrigation works, chiefly the great Triple Project. The large expenditure on railways is imperial. Of the gross income more than three-fourths is derived from the land (Land Revenue, 46 p.c., and Forests, 1 $\frac{1}{4}$ p.c.). The balance consists of excise 8 $\frac{1}{2}$ p.c., Stamps, 7 p.c., Income Tax over 2 p.c., and other heads 5 $\frac{3}{4}$ p.c.

Land Revenue.—Certain items are included under the Land Revenue head which are no part of the assessment of the land. The real land

revenue of the Panjab is about £2,000,000 and falls roughly at the rate of eighteen pence per cultivated acre (Table II). It is not a land tax, but an *extremely* moderate quite rent. In India the ruler has always taken a share of the produce of the land from the persons in whom he recognized a permanent right to occupy it or arrange for its tillage. The title of the Raja to his share and the right of the occupier to hold the land he tilled and pass it on to his children both formed part of the customary law of the country. Under Indian rule the Raja's share was often collected in kind, and the proportion of the crop taken left the tiller of the soil little or nothing beyond what was needed for the bare support of himself and his family. What the British government did was to commute the share in kind into a cash demand and gradually to limit its amount to a reasonable figure. The need of moderation was not learned without painful experience, but the Panjab was fortunate in this that, except as regards the Delhi territory, the lesson had been learned and a reasonable system evolved in the United Provinces before the officers it sent to the Panjab began the regular assessments of the districts of the new province. A land revenue settlement is usually made for a term of 20 or 30 years. Since 1860 the limit of the government demand has been fixed at one half of the rental, but this figure is very rarely approached in practice. Between a quarter and a third would be nearer the mark. A large part of the land is tilled by the owners, and the rent of the whole has to be calculated from the data for the part, often not more than a third or two-fifths of the whole, cultivated by tenants at will. The calculation is complicated by the fact that kind rents consisting of a share of the crop are in most places commoner than cash rents and are increasing in favour. The determination of the cash value of the rent where the crop is shared is a very difficult task. There is a large margin for error, but there can be no doubt that the net result has almost always been undervaluation. It is probable that the share of the produce of the fields which the land revenue absorbs rarely exceeds one-seventh and is more often one-tenth or less. A clear proof of the general moderation of Panjab assessments is furnished by the fact that in the three years ending 1910-11 the recorded prices in sales amounted to more than Rs. 125 per rupee of land revenue of the land sold, which

may be taken as implying a belief on the part of purchasers that the landlord's rent is not double, but five or six times the land revenue assessment, for a man would hardly pay Rs. 125 unless he expected to get at least six or seven rupees annual profit.

Fluctuating Assessments. —The old native plan of taking a share of the crop, though it offered great opportunity for dishonesty on both sides, had at least the merit of roughly adjusting the demand to the character of the seasons. It was slowly realized that there were parts of the province where the harvests were so precarious that even a very moderate fixed cash assessment was unsuitable. Various systems of fluctuating cash assessment have therefore been introduced, and one-fourth of the total demand is now of this character, the proportion having been greatly increased by the adoption of the fluctuating principle in the new canal colonies.

Suspensions and Remissions. —Where fixity is retained the strain in bad seasons is lessened by a free use of suspensions, and, if the amounts of which the collection has been deferred accumulate owing to a succession of bad seasons, resort is had to remission.

Irrigation Income and Expenditure. —In a normal year in the Panjab over one-fourth of the total crops is matured by the help of Government Canals, and this proportion will soon be largely increased. In 1911-12 the income from canals amounted to £1,474,000, and the working expenses of £984,000, leaving a surplus of £490,000. Nearly the whole of the income is derived from water rates, which represent the price paid by the cultivator for irrigation provided by State expenditure. The rates vary for different crops and on different canals. The average incidence may be roughly put at Rs. 4 or a little over five shillings per acre. In calculating the profit on canals allowance is made for land revenue dependent on irrigation, amounting to nearly £400,000.

CHAPTER XXV

PANJAB DISTRICTS AND DELHI

Districts and Divisions. — The Panjab now consists of 28 districts grouped in five divisions. In descriptions of districts and states boundaries, railways, and roads, which appear on the face of the inset maps, are omitted. Details regarding cultivation and crops will be found in Tables III, III and IV, and information as to places of note in Chapter xxx. The revenue figures of Panjab districts in this chapter relate to the year 1911-12.



Fig. 83. Delhi Enclave

بِحَكْمَةِ ازْلٍ چُونْ بِهِ جَنْتَ رَسِيدٍ شَهْ مَدْنَ عَلَمْ عَبْدِ الْحَكِيمِ
نَدَاشْدَرْلَ سَالْ تَرْجِيلَ اَوْ وَلِيْ مَخْدُونْ عَلَمْ عَبْدِ الْحَكِيمِ

چِ بِحَكْمَةِ خَدَارِ اَنْ جَنَّا شَدَ حَكِيمُ آنَ عَالَمُ دَيْنَ بَادَرَوْتَ
کَوْاں مَارَفَ بَهْتَرِ تَحَاشَ دَوْبَارَهْ مَقْتَنِ اَهْلَ جَنَّتَ

The garden is no longer in existence and the grave itself is in a dilapidated condition. (4) Idgah-i-Maulvi Saheb (5) Talab-i-Maulvi Saheb. It is said that this tank cost lakhs of rupees, a conduit from the Chenab river brought water to it, the trace of which are still to be found here and there while the tank itself exists in a ruined condition.

The writings of Maulana are mainly on etymology, scholasticism, logic philosophy and ethics and number twenty two. One famous treatise on philosophy: سلسلیٰ میں التصورات was published in Egypt some time ago.

Books on history mention Maulvi Abdullah as his son and in 'Maasir-ul-Kiram,' 'Asar-i-Khair,' 'Rawza-i-Qaiyumiya,' Maulvi Abdullah is stated to be a renowned scholar whose writings were considered of high value so that a worthy father had a worthy son.

Khawaja Abdul Karim was a learned Kashmiri and a man of distinction having won his way by dint of intelligence and industry. Since his very childhood he had cherished dreams of making a pilgrimage to Mecca and of visiting the holy shrines of the great celebrities of Islam. At the time of Nadir Shah's invasion of India, Khwaja Abdul Karim had come down to Shahjahanabad (Delhi) with a view to proceeding to Mecca. His dreams of making a pilgrimage, though within sight of realisation, was delayed when, on being introduced to Nadir Shah who then held possession of

the land routes to Arabia, for a permit, the latter, struck by his intelligence offered him employment. Soon after the sack of Delhi, Nadir Shah gave out that he was returning to Persia. Khwaja Abdul Karim was given an appointment first in Nadir Shah's camp and then he subsequently he is said to have risen to the position of Nadir's Foreign Minister and was on one occasion deputed as an envoy to Balklava and then to the Sultan of Turkey. On retirement, Nadir Shah finally permitted him to proceed to Mecca.

Khwaja Abdul Karim's travels extended over many lands. He went to Baghdad, Damscus and Aleppo and then proceeded to Mecca along with Mirza Muhammad Hasham who was called Nawab Motamad-ul-Mulk Syed Alavi Khan, Hakim Bashi. The Hakim who had been brought from the court of Delhi by Nadir Shah obtained permission to perform the Haj after curing Nadir of his illness.

After pilgrimage, Khawaja Abdul Karim went to the port of Jeddah from where he sailed to Hooghly. He remained in India for several years and made an intense study of the social and political conditions of Indians as well as of the Europeans who had settled in Bengal and on the coast of Coromandal.

After his long journey over many lands the Khawaja finally returned to Kashmir where he was persuaded by his friends to write down the experiences he had gained during his extensive travels. The result was that he wrote his *Memoirs* in Persian.⁷ The book can stand comparison with some of the best works on travel. It contains many a picturesque description of men and things, and bears testimony of Khawaja Abdul Karim's intellectual ability, his power of observation and his fascinating style of writing. The book besides being written in an effective and interesting style,

contains a wealth of information, which is of great importance as providing valuable references to contemporary history, namely an account of the court of Persia and a narrative of the most interesting events in the history of Hindustan from 1739 to 1749 A.D.

As an illustration of his great power of description and of minute observation we might mention his description covering four pages of his book, of Nadir Shah's tent⁸ decorated with precious stones. He gives a most vivid idea of the tent used by the great Persian conqueror, which he ordered to be pitched in the Dewan Khana or the public hall where the celebrated peacock Throne of Shah Jahan and Takht-i-Nadiri (Nadir's throne) and throne of some other monarchs were placed.

Another example of his keen understanding of men is his intelligent account of the Europeans in Bengal given in the chapter entitled "A summary account of occurrences in Bengal and different parts of Hindustan."⁹ The Khwaja describes in apt words the tastes and habits of Europeans, their cleanliness, the freedom of their women, their business-like habits, and their firm military discipline.

The book is full of intelligent reflections and wise observations and forms a valuable record of references to contemporary events and of the personality of Khwaja Abdul Karim.

Among the present day *Ulema* of Kashmiri origin the name of Maulvi Anwar Shah of the Lolab valley is worth mentioning on account of his eminence in Muslim Theology. He is the Rector of the Dar-ul-Ulum at Deoband, U.P., and the successor of the late Maulana Mahmud-ul-Hasan who has been universally acclaimed one of the most leading *Ulema* of the present day Islamic world.

Some Women of Note

In the roll of notable women of Kashmir during Muslim rule the place of honour certainly belongs to Lalla Arifa, who has influenced Kashmir to such an extent that her sayings are on the lips of all Kashmiris—Hindus and Musalmans—and her memory is revered by all. Hindus claim her as their while Musalmans claim her as theirs and though originally a Hindu, she was greatly influenced by Islamic Sufistic thought and may, in truth, be said to be above all formal religious conventionalities. She was contemporary of Shah Hamadan at the time of his visit to Kashmir and Mohammadans affirm that she embraced Islam at his hands and inspired Sheikh Nur-ud-Din with her teachings. Her verses, as edited by Grierson and Barnett, show that she was imbued with Yoga philosophy as propounded by the Shaiva branch of Hindu religion.

Lalla Arifa was born about the middle of the 14th century of the Christian era in the time of Sultan Ala-ud-Din. Her parents lived at Pandrethan, the old capital of Kashmir, four miles to the south-east of modern Srinagar. She is said to have been married in Pampur and to have been cruelly treated by her step mother-in-law who nearly starved her. Whether a big piece of mutton or a small one was brought for family use, poor Lalla had always "a stone to her dinner," that is to say, her step mother-in-law used to put a lumpy stone on her platter and thinly cover it with rice so that it looked quite a big heap. And yet Lalla would never murmur! She appears to have brought her married life to a close by quitting her home and by taking to roaming about naked. According to one account, Lalla was so named on account of her increased abdomen. Hindus call her Laleshwari, Mohammadans Lal Dedi or Mother Lalla.

Lalla used to wander about in rags and went about the country singing and dancing in a half-nude or even nude condition. When remonstrated with for such disregard for decency she is said to have replied that they only were men who feared God and that there were very few of such about. While she was roaming about naked, Shah Hamadan arrived in Kashmir and one day she saw him in the distance and cried out "I have seen a man" and turned and fled. Thereafter she soon wore clothes and recognised shah Hamadan to be "a man" and freely associated with him and other Muslim saints of our time. This incident is said to have taken place at Khanpur near Srinagar.

Lalla died at an advanced age at Bijbehara, 28 miles to the south-east of Srinagar just outside the Jama Masjid there, near its south-eastern corner.

It is commonly avowed by educated Mohammadans in Kashmir that the verses of Lalla as collected and published are those which she composed before her contact with Shah Hamadan and other Muslim saints, that her verses after that contact are more expressly reflective of Muslim thought. In fact, I was positively assured by a Mohammadans graduate occupying quite a respectable post in the Kashmir State Service that a certain Zaildar near Charar Sharif had possession of such verses. For want of time I regret I could not go to see the Zaildar and verify the accuracy of his statement. I hope to be able to take up this question when I next visit Kashmir. But it is well-known that even the avowedly Muslim saint, in fact the patron-saint of Kashmir, Sheikh Nur-ud-Din, is given the distinctly Hindu name of Nand Riosh (Nand Rishi) by the Pandits of the valley.

The sayings of Lalla (as edited by Grierson and Barnett) says Sir Richard Temple, commence with a narration of her own

spiritual experience. She had wandered far and wide in search of the truth had made pilgrimages to holy places and sought for salvation through formal rites, but all in vain. Then suddenly she found in her own 'home,' her own soil. There she found her own self which became to her the equivalent of a spiritual preceptor and she learned that it and the supreme self (God) were one. Sir Richard Temple has made a verse translation* of her sayings some of which are reproduced below. The reader will agree with Sir Richard that in her method of teaching her doctrine by means of verse, Lalla is at once Mystical and transcendental.

3. Passionate, with longing in mine eyes,
 Searching wide and seeking nights and days
 Lo: I beheld the Truthful One, the Wise,
 Here in mine own House to fill my gaze.
 That was the day of my lucky star.
 Breathless, I held him my Guide to be.

4. So my lamp of knowledge blazed afar,
 Fanned by slow breath from the throat of me,
 They, my bright soul to my self revealed,
 Winnowed I abroad my inner light;
 And with darkness all-around me sealed
 Did I garner Truth and hold him tight.

94. "Think not on the things that are without;
 Fix upon thy inner self thy Thought:
 So shalt thou be freed from let or doubt":
 Precepts these that my Preceptor taught
 Dance then, Lalla, clothed but by the air:
 Sing, then, Lalla, clad but in the sky.
 Air and sky: what garment is more fair?
 "Cloth" saith Custom. Doth that sanctify?

28. Keep a little raiment for the cold
And as little food for stomach's sake:
Pickings for the crows thy body hold,
But thy mind a house of knowledge make.

43. Slay first the thieves—desire, lust and pride;
Learn thou then to be the slave of all.
Robbers only for a while abide;
Ever liveth the devoted call.
All a man's gain here is nothing worth,
Save when his service shall be his sword;
Ash from the fire is the sun of birth;
Gain thou then the knowledge of the Lord.

214. Heedless ever that the Day Sublime
cometh when the wicked looketh not
When the apple of the autumn time
Ripens with the summer apricot

61. Whatsoever thing I do of toil,
Burdens of completion on me lie;
Yet unto another falls the spoil
And gains he the fruit thereof, not I.
Yet if I toil with no thought of self,
All my works before the self I lay:
Setting faith and duty before help,
Well for me shall be the onward way.

Taj Khatun was the daughter of Syed Hasan, the commander of Sultan Shihab-ud-Din's forces. Syed Hasan

belonged to a very distinguished family and was the son of Syed Taj-ud-Din Baihaqi. It will be recalled that Shah Hamadan brought about reconciliation between the Kashmir and Tughlaq armies at Ferozepore in the Punjab. It was on this occasion that according to one of the terms of the treaty two girls of the royal family of Tughlaqs were married to two Kashmir notabilities. Bibi Taj Khatun was the daughter of Syed Hasan from this marriage of his among the Tughlaqs. Special pains were taken in the matter of her education and she was subsequently married to Mir Muhammad Hamadani, the son of Shah Hamadan. Bibi Taj Khatun was of a saintly character and passed most of her time in meditation in the garden built for her near which Fateh Kadal was subsequently built. She was buried in the same garden.

Barea was the daughter of Malik Saif-ud-Din, the chief minister of Sikander and after her conversion with her father, was married to Mir Muhammad Hamadani after the death of Bibi Taj Khatun.

Haura was the mother of Sultan Sikander and the queen of Sultan Shihab-ud-Din. She was a very remarkable woman and exercised a tremendous influence over her husband and subsequently over Sultan Sikander. It was her strong personality that kept down all mischief during the earlier part of the reign of her son. She was gifted with a strong mind and could strike terror into the hearts of the enemies. She practically acted as a regent for her son for some time. When she found that her own daughter and son-in-law were plotting against the person of Sikander, she did not hesitate to get them disposed of without any delay and thus nipped in the bud an evil which might have subverted the royal line of Shah Mir. Despite her prominent part in the civil and military affairs of the kingdom, she found time for devotion and was the disciple of Shah Hamadan. She was buried in the first

royal burial ground which still exists near the Kanil Masjid at Srinagar.

Bahat lived in the time of Badh Shah and was noted for her learning. Her saying in Persian are still on the lips of educated Kashmiris. One of her saying is:

ک از بود وار چید و از اندوه رست و از غم و نی امید جست

(He who is relieved of self is relieved of anxiety and is relieved of the sorrows and fears of hope.)

Her grave can be seen in Zalusa village in Nagam.

Lachhma Khatun was the daughter of Malik Saif-ud-Din Dar, a military commander during the reigns of Badh Shah and Hasan Shah. She was married to Malik Jalal-ud-Din, a minister of Badh Shah and was well-known for her learning and piety and founded a *Khanqah* and Madrassa near the Jami' Masjid in Mohalla Gojwara. The Madrassa does not exist but the *khanqah* is known as Masjid Qaza. For her *khanqah* and Madrassa she brought a waterway right from Lar which was called Lachhma Kol, an off-shoot of which was utilised for the Jami' Masjid. She profited by the company of Baba Ismail Kubravi who was the Sheikh-ul-Islam of Sultan Hasan Shah and became her *murid* (disciple).

Bibi Saleha was the queen of Sultan Muhammad Shah and the sister of Kaji Chak. She also came under the influence of Baba Ismail Kubravi. Kashmiri remember her for the re-construction of the *Ziarat* of Shah Hamadan, known as Khanqah-i-Moalla which had been demolished by the Shias. She would not touch state revenues and therefore, sold her jewellery to defray the expenses.

The roll of female worthies of Kashmir claims the tutoress of the celebrated Zeb-un-Nisa, the daughter of Aurangzeb. Hafiza

Mariam to whom Zeb-un-Nisa owed her education was a learned lady, wife of Mirza Shukrullah of Kashmir.

Zeb-un-Nisa* Begam or originally farzana Begam (French form, Paragauna) who became the celebrated princess of Sardhana, is known to history as Begam Sombre or Sumru. She was undoubtedly a woman of undaunted courage, great cleverness, unusual tact and extraordinary charm of person. Captain Mundy in his *Journal of a tour in India* says that the history of her life, if properly known, would form a series of scenes. Such as perhaps, no other female could have gone through. Colonel Skinner had often, during his service with the Marattas, seen her, then a beautiful young woman, "leading on her troops to the attack in person and displaying in the midst of carnage the greatest intrepidity and presence of mind." Walter Reinhardt who had taken the *nom de guerre* of Summers (when he enlisted in the British army) which his comrades from his saturnine complexion turned into Sombre and the Indians, by corruption Sumru or Shumru, was responsible for the Patna massacre in 1763 A.D. on account of an unprovoked attack by the English on that city then held by Nawab Mir Qasim. Reinhardt who was of obscure parentage in the Electorate of Treves, had obtained the principality of Sardhana as a *jagir* from the Emperor of Delhi, sought the hand of the Begam, when a young and handsome girl, formally married her in 1773 A.D. and converted her to the Roman Catholic Religion, though, according to another account, she was baptized three years after the death of Sumru who died or was murdered in the year 1778 A.D. at Agra. Begam Sumru's second husband was a French adventurer, a soldier of fortune named Levassoult who commanded her army.

Begam Sumru died on 27th January 1836 A.D. (8th Shawwal 1251 A.H.) aged ninety or some say 88 years. She must

have therefore been born in 1746 or 1748 A.D. The Begam was buried in the Church of Sardhana of which she was the founder. At her death she left upwards of six lakhs of rupees for various charitable and pious purposes and gave instructions for founding a college for young men to serve on the Apostolic Mission to Tibet and Hindustan. Her gifts were not confined to Christianity alone but she subscribed liberally towards Hindu and Musalman institution as well. The benevolence of her disposition and extensive charity which had endeared her to thousands excited in the mind of Lord William Bentinck "sentiments of the warmest admiration." On her death, her *jagir* lapsed to the British Government. She bequeathed, in cash, more than half a crore of rupees.

Thomas describes the Begam as small and plump, her complexion fair and her eyes large and animated. She wore Hindustani costume made of most costly materials and spoke Persian and Urdu fluently and attended personally to business.

Begam Sumru was not a sovereign princess; her status was that of *Jagirdar* holding lands of the Delhi crown on military tenure, though at one time, if she had accepted the proposal of Ghulam Qadir Rohilla and sided with him against the Emperor, perhaps she would have been the Empress of India. The British Government addressed her as Her Highness. Her "estate was extremely wealthy and well provided with fine towns such as Baraut, Dinauli, Barnawa, Sardhana, Jewar and Dankaur and close by her dominions were the large marts of Meerut and Delhi." (N.W.P. Gazetteer, iii, p. 295). The seat of the administration of the *jagir* was Sardhana the extent of which varied from time to time. The *Jagir* of Sardhana was conferred on her by the Delhi Emperor's *farman*. At one time her dominions included the villages of Bala Bai, the daughter of Mahadji Sindhia, in the Meerut district, which

were, however, given over to the English. The *pargana* of Pahaser in the Doab containing 54 villages was granted to her by Daulat Rao Sindhia in 1803 for military help rendered to him. The Begam's *Jagir* was the most valuable in the Doab, possessing as it did, the adventages of the canal, the Jamuna and the Hindaun rivers, the Krishni and Kali *nadis* which afforded an ample supply of water and the soil, naturally fertile, produced in, abundance, grains of all kinds, cotton, sugar cane and tobacco. The revenue yielded by the estate amounted to eight lakhs of rupees per annum. Besides this, there were sources of incomes. For instance, the Begam enjoyed the right to collect transit duties on goods passing through her territories by land and water.

The military establishment of the Begam, according to Sleeman, cost her about four lakhs of rupees a year, her civil establishments eighty thousand and her household establishments and expenses about the same, the total thus amounted to six lakhs of rupees a year.

As a *jagirdar* of the Emperor of Delhi, the Begam had maintain an army to help her sovereign in his need. Part of her army resided at Sardhene, her capital and part at Delhi in attendance upon the Emperor. Apart from her regular army, she raised irregular troops whenever need arose. She had a well-stored arsenal and a foundry for canon within the walls of a small fortress built near her dwelling at Sardhana. Her army was a well-disciplined force, composed of infantry, artillery and a complement of cavalry, manned by Europeans of different nationalities like Marachand, Baours, Evans and Dudrence who were principally occupied in opposing the inroads of the Sikhs. After them the command of her troops devolved successively upon the Irishman George Thomas, the Frenchmen Lavassoult and Saleur and Col. Poethod. At the time of her death her forces were led by Genl.

Reghalini and eleven other European officers, one of whom was John Thomas, son of the celebrated George Thomas. The Begam herself commanded her army on many a battle-field. The people in the Deccan who knew her by reputation, on the occasion of her assistance to Sindhia, believed her to be a witch. After her treaty with the British she became their most sincerely and was never found on the battle-field again except on one occasion. The siege of Bharatpur conducted by Lord Combermere, revived all her military ardour and she was desirous of taking the field and obtaining a share of the glory. Major Archer, Aide-de-Camp to Lord Combermere, writes: "When the army was before Bharatpur in 1826, the Commander-in-Chief was desirous that no native chief of our allies should accompany the besieging force with any of his troops; this order hurt the pride of the Begam who remonstrated. She was told that the large and holy place of Muttra was to be confined to her care. "Nonsense." Said she, "if I don't go to Bharatpur, all Hindustan will say I am grown a coward in my old age." (Skinner, i, 144 n).

The Begam possessed many costly palaces and gardens, beautifully laid out, at different places which she visited in turn according to her fancy.¹⁰ Her mission at Delhi stood within a very extensive garden. Its parterres were thickly planted with the choicest fruits and flowers and it was traversed by avenues of superb cypresses. She also possessed a garden near Bharatpur and a good house within that fort. At Agra she had three gardens and a market in the same district. In Meerut she had a large house within an extensive garden where she most often lived before her Sardhana palace was built in 1834. This Meerut house is known as Begam Kothi. At Khirwa, three or four miles from Sardhana, she had another fine house which she was in the habit of visiting for a change of air. It was built in 1828 and leveled to the ground

in 1848. Some two years before her death in 1836 the Begam built a very beautiful two-storeyed palace in the Anglo-Indian style at Sardhana. The design and execution of the work was entrusted to Major Reghalini, an Italian officer in her service. It is known by the name of Dilkusha Kothi.

The Kashmiri Language

Whenever Islam had gone, it has had an extraordinary influence over the language of the land and its script too. The present Persian and Turkish languages are instances of the kind. These, in turn, have influenced others. Remove the influence of Islam and you will see what is left of the Persian or the Turkish languages. In India, though Islam had not given a wholly new language to the country, it has substantially transformed the Brij Bhasha into the Urdu of our day.

A not dissimilar process has taken place in Kashmir. The original Dardic language has supplied the skeleton. Sanskrit has given it flesh but Islam has given it life. And we shall see how the modern Kashmiri language laid the foundation of its present day literature during Muslim rule.

Hitherto it was believed that the Kashmiri language was of Sanskrit origin, but the researches of Sir George Grierson have established the fact that this claim of Sanskrit origin cannot be sustained and that Kashmiri belongs to the Dard group of the Dardic languages. It has, however, for many centuries been subject to Indian influence and its vocabulary includes a large number of words derived from India, which have misled people to suppose that it is derived from Sanskrit. Some people in Kashmir still cling to the old view but the result of the researches of Sir George has been accepted by scholars who can speak with authority on the

subject. In order, therefore, to trace its history it is essential that we should know what 'Dard' signifies. But before we do so, let us briefly go over the distribution of Aryan languages. It is well-known that there was in pre-historic times a language known as Aryan, spoken by the common ancestors of the Iranians and of the Indo-Aryans in the oasis of Khiva.¹¹ "The original home, whence the Aryans separated from the ancestors of the other Indo-European languages," says Sir George, "is believed to have been the steppe-country of southern Russia." The common ancestors of the Indo-Aryans appear to have followed up the course of the Oxus and the Jaxartes into the high-lying country round Khokand and Badakhshan, where a portion of them separated from the others, marching south over the western passes of the Hindu Kush into the valley of the river Kabul and thence into the plains of India where they settled, as the ancestors of the present Indo-Aryans. The Aryans who remained behind on the north of the Hindu Kush and who did not share in the migration to the Kabul valley spread eastwards and westwards. Those who migrated to the east occupied the Pamirs and now speak Ghalchah. Those who went westwards occupied Merv, Persia and Baluchistan and their descendants now speak those languages which together with the Ghalchah languages, are classed as Iranian.¹² Apparently, therefore, the Iranian languages are the direct descendants of the ancient Aryan stock, while the Indo-Aryan languages represent a branch which issued from the parent stem at a very early date. The Dardic languages possess many characteristics which are peculiar to themselves, while in some other respects they agree with Indo-Aryan and in yet other respect, with Iranian languages. They do not possess all the characteristics either of Indo-Aryan or of Iranian. It is assumed that at the time when they issued from the Aryan language, the Indo-Aryan language had already

branched forth from it and that the Aryan language had, by that time, developed further on its own lines in the direction of Iranian; but that development had not yet progressed so far as to reach all the typical characteristics of Iranian and the Aryan language still retained some, though not all of the characteristics which it possessed when the Indo-Aryans set out for the Kabul Valley. In brief, Aryan is the parent-stock, from which shoots off the Indo-Aryan language at a very early date and passes down to India. Then before the other branch of the parent-stock becomes actually Iranian, another branch, the Dardic, shoots off and settles in what we call *Dardistan*.

The word 'Dard' says Sir George, has a long history and the people bearing the name are a very ancient tribe, who are spoken of, in Sanskrit literature, as 'Darda' or 'Darada', which name is of frequent occurrence not only in geographical works, but also in the epic poems and in the Puranas. Kalhana often refers to them under the name of Dards' or 'Daradas' and mentions them as inhabiting the country, where we now find the Shins who, at the present day are called Dards. Greeks and Romans included, under the name of Dard country, the whole mountainous tract between the Hindu Kush and the frontiers of India Proper. Accordingly, this tract is, at present, known as Dardistan, though this is not strictly accurate as it includes much of the country not occupied by Dards. The Aryan languages spoken in this tract are, therefore, termed Dardic.

Dardistan was once inhabited by tribes whom Sanskrit writers grouped together under the title of Pisacha. But exception has been taken to the use of this word as it connotes a cannibal demon and therefore, that term has been given up and the name Dardic used instead. It denotes a combination of three groups (a)

Kafir (b) Chitrali (c) Dard group proper. This last consists of (1) Shina (2) Kashmiri, and (3) Kohistani.

Kashmiri is the language of the Valley Kashmir and of the neighbouring valleys. Although it has a Dardic basis, it has come, to a large extent, under the influence of the Indo-Aryan language spoken to its south. It is the only one of the Dardic language that has a literature, and is estimated to be spoken by 1,256,986 people in Kashmir (Census 1921) and over 8,000 emigrants in the North-Western Frontier, the Punjab and other Provinces. Kashmiri has also overflowed the Pir Pantsal range into the Jammu Province of the State. It has one true dialect which is called Kashtwar.

In the standard Kashmiri of the valley there are minor differences of language, for instance, the Kashmiri spoken by Musalmans differ from that spoken by Pandits. Not only is the vocabulary of the former more filled with words borrowed from Persian (and Turkish and Arabic) but also there are slight difference of pronunciation, again, there is the distinction between town and village talk or between *Groost* and *Grashia* (the peasant and the prince). Then, there is the distinction between the language of prose and that of poetry.

Kashmiri has a small but respectable list of literary works, the foundation of which was laid during early Muslim rule. According to Sir George Grierson, the oldest author is Lalla or Lal Ded (born in the reign of Sultan Ala-ud-Din) hundreds of whose verses are quoted all over the valley and are in every one's mouth, MS. collections of which have, from time to time, been made under the Sanskrit title of *Lalavakyani*. Lal Didi's verses¹³ are all religious. *Banasurvadha* is the first poem that can be dated though its authorship is not known. It is "on music and is in the Hindu dialect and was written in the reign of Sultan Zain-ul-Abidin". "Satpar

by Munuji on medicine and astrology, *Lengparan* by Paruthi on the Hindu law of inheritance, *Ramavataracharita*¹⁴ a history of Rama, with a sequel entitled the *Lavakusacharita*, *Krishnavataralila* the history of Krishna, *Sivaparinaya*. history of the circumstances connected with Siva's marriage with Parvati are highly poetical works in pure Kashmiri, also in the Hindu dialect."

Mahmud Gami is the best known of writers in the Musalmans style and is the author of *Yusuf Zulaikha*.¹⁵ *Laila-wa-Majnun*, *Shirin-o-Khusrau*, all on familiar Persian models. Buhler in his *Report of a tour in search of Sanskrit MSS*, mentions the following works: *Vamiq-o-Azra* by Saif-ud-Din, *Nisab* a sort of lexicon by Sumty Pandit, *Amsilla* (a poem), *Harun-ur-Rashid*, *Mahmud-i-Ghaznavim*, *Sheikh San'a*, by Aziz-ud-Din. Hamidullah's *Akbar Nama* is a history of Afghan rule dedicated to Akbar Khan of Afghanistan (both in Persian and Kashmiri). *Divan-i-Nazim*, the Dialogue of Sukh jewan and his wife and Zahir-ud-Din's *Makhzam-ul-adviah-i-Kashmir* are others.

The Bible was translated into Kashmiri and was published by the British and Foreign Bible Society in the Persian character. The grammar of Kashmiri in the Sanskrit language entitled the *Kasmirasabdamrita* by Pandit Isvara Kaula was edited by Sir George Grierson and published by the Asiatic Society of Bengal in 1893. The Pandit was engaged on a Kashmiri-Sanskrit Dictionary at the time of his death in 1893, but the materials collected by him for this purpose were subsequently made over to Sir George Grierson and from these and other sources a Kashmiri-English Dictionary is now being prepared by him and published by the Bengal Asiatic Society.

Connected with formal literature, though not a part of it, are the subjects of folk-tales and proverbs. Kashmir is a land of

proverbs and common speech is profusely interlarded with them. Some of the proverbs have been collected and arranged by Rev. J. Hinton Knowles, C.M.S., and are full of information regarding the customs and character of the people.

Kashmir is also celebrated for its folk-tales. Not only are some familiar in every home, but there are also professional *rawis* or reciters who make their living by telling fairy tales worthy of the Arabian Nights. These men, says Sir George, recite with astonishing verbal accuracy stories that have been handed down to them by their predecessors now and then containing words that have fallen out of use and with the meaning of which they are now unacquainted. Sir Aurel Stein has made a collection of such tales as dictated by Hatim Tilawon of Panzil, a professional story-teller to the Sind valley in Kashmir, which has been translated by Sir George Grierson and published by John Murray (1923) under the title of Hatim's Tales.

Kashmiri use three alphabets for writing their language, the Sarda, the Nagri and the Persian. The Persian character is used by Musalmans and by several Hindus. It is also the character employed at the present day by Christian Missionaries in writing books designed for natives of the country. The spelling of Kashmiri words written in the Persian character has the advantage of being fairly constant but the alphabet is not quite so well suited for illustrating the complicated vowel sounds of the language. The Nagri character has a limited use amongst the Hindus. The Sarda character is the ancient indigenous character of Kashmiri. It is allied to Nagri, being built on the same system and corresponding with it, letter from letter, but the forms of the letters differ greatly. It is more closely allied to the Takri alphabets of the Punjab Hills.

and has a complete array of signs for the different vowels. It is generally used by Hindus.

Before we close this note on the Kashmiri language, it is interesting to observe that, in spite of the influence of Sanskrit, modern Kashmiri has abandoned Indian metres, "The metres used are all Iranian and that may be called the heroic metre of the language, employed even in Hindu epics like the *Ramavatara Charita*, is the well-known Persian metre called *Bahr-i-Hazaj*."

Kashmir's contribution to Persian Poetry

It is a universal fact that the physical features of country profoundly influence its people, their occupation, their character and their art and literature. Kashmir is a typical instance of the kind. Nature has profusely endowed Kashmir with the wealth of real beauty which has made it renowned as the paradise of the earth. Such a land could not fail to be the home of poetry perhaps the highest expression of beauty. But it is a pity that Kashmir poetry has not been properly appreciated and the outside world knows very little of what the genius of Kashmir has contributed to the realm of poetic thought. The art and crafts of Kashmir have acquired a fame on account of the energy of 'commercial artist' but the art of the poet has lain hidden in the manuscripts which have hardly seen the light of the day. As we are concerned with the Muslim period of Kashmir history, we shall confine ourselves to what Kashmir had done for the muse of poetry in the language of its adoption, namely, Persian. If Persia is proud of its Firdausi, its Hafiz, its Rumi and its Nizami, Kashmir is equally proud of its Shaiq, its Ghani, Its Kanil and its Sarfi. Abdul Wahab Shaiq wrote a versified history of Kashmir consisting of 80,000 couplets; Ghani's *Divan* has gone beyond the confines of Kashmir though it has yet to await its days of proper appreciation. The *masnavi* of Mirza

